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ABSTRACT

The primary purpose of this project was to establish a structured multi-disciplinary and interdisciplinary program of services for the traumatically spinal cord injured (SCI) clients at the West Virginia Rehabilitation Center. The program, conducted from July 1, 1979 to June 30, 1982, included services ranging from physical and mental restoration to job placement and followup services. The project drew upon the existing programs, staff, and resources of the center, the field program, and the community. Additional project staff were hired to augment and strengthen existing programs as well as to address areas perceived as unmet needs. These areas included the following: patient and family education; preservice and inservice training opportunities for staff serving SCI clients; and appropriate, accessible housing. The project was able to improve the effectiveness of existing programs and staff with the addition of SCI project staff. The project presented an opportunity to assess, evaluate, recommend, and implement objectively the positive changes in all areas related to spinal cord injury services with special emphasis placed on those areas perceived as unmet needs. (KC)

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SPINAL CORD INJURY PROJECT:

A PROJECT TO IMPROVE AND EXPAND SPINAL CORD INJURY SERVICES AT THE WEST VIRGINIA REHABILITATION CENTER

The Final Report of This Innovation and Expansion Project

Conducted by

The West Virginia Division of Vocational Rehabilitation

at the West Virginia Rehabilitation Center

July 1, 1979 to June 30, 1982

Report Prepared By:

Project Staff in cooperation with the
Program Development Section
State Board of Vocational Education
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Charleston, West Virginia 25305

Funded in part by a Rehabilitation Services Administration Innovation and Expansion Grant - #79-7/02.

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ACKNOWLEDGEMENTS

This final report is the product of the efforts of the entire SCI Project staff. Each staff member contributed from his or her special area of expertise. But, more importantly, each staff member contributed to the sum total of our combined efforts. Any redundancy in this report is indicative of our mutual efforts in areas of common concern.

Recognition and appreciation is extended to the entire Project staff for their work and dedication during the past 36 months. A special thank you is extended to Ms. Charlotte Mullins for her patience and perseverance during the completion of this manuscript.

Grateful appreciation is also extended to all others who graciously gave of themselves in this cooperative undertaking. Their talents, skills, guidance, and support provided us the needed resources to achieve our successes.

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GLOSSARY OF TERMS AND ABBREVIATIONS

ADL - activities of daily living

CAMC - Charleston Area Medical Center

CARF - Commission on Accreditation of Rehabilitation Facilities

Client/Student/Patient - Terms may be used interchangeably to refer to the same individual. The individual is considered to be a client of the West Virginia Division of Vocational Rehabilitation, a student at the West Virginia Rehabilitation Center, and the patient of the hospital or physician.

Clinic/Outpatient Clinic - An area in the Medical Services building which provides student health services for dormitory and commuting clients. This area also provides office space and examining rooms for our medical consultants. It also houses the pharmacy, x-ray equipment, and visual examination equipment.

Division/Agency/DVR/WVDVR - All used to indicate the West Virginia Division of Vocational Rehabilitation.

L.O.T.R./O.T.R./O.T. - Occupational therapist - licensed by the State and registered by the professional Occupational Therapy Association.

R. N. - Registered Nurse

R.P.T./P.T. - Physical therapist - licensed by the State and registered with the professional Physical Therapy Association.

SCI - spinal cord injury

SCIP - Spinal Cord Injury Project

Therapy counselor - One of several counselors with an exclusive caseload of WVRC students receiving physical restoration services.

Treatment Unit/T.U. - That portion of the Medical Services building housing our more severely disabled clients requiring the availability of 24 hour nursing services.

WVRC/Center - West Virginia Rehabilitation Center

PURPOSE

The primary purpose of the Project was to establish a structured multidisciplinary and interdisciplinary program of services for the traumatic spinal cord injured (SCI) clients at the West Virginia Rehabilitation Center. The program was to include services ranging from physical/mental restoration to job placement and follow along services. The Project drew upon the existing programs, staff, and resources of the Center, the field program, and the community. Additional Project staff were to augment and strengthen existing programs, as well as address areas perceived as unmet needs. These areas included the following: patient and family education; pre-service and in-service training opportunities for staff serving SCI clients; and appropriate, accessible housing. The Project endeavored to improve the effectiveness of existing programs and staff with the addition of SCI Project staff. The Project presented an opportunity to objectively assess, evaluate, recommend, and possibly implement positive changes in all areas related to spinal cord injury services with special emphasis placed on those areas perceived as unmet needs.

CHAPTER 1

BACKGROUND INFORMATION AND STATEMENT OF THE REHABILITATION PROBLEM

Since 1957, the West Virginia Rehabilitation Center (WVRC) has been providing vocational rehabilitation services to spinal cord injured clients. Over the years to the present date, the Center has experienced dramatic periods of growth in its physical plant, programs, staff, and number of clients served. In addition to the numerical increase in clients served, there has also been a steady increase in the types of disabilities represented with an increasing percentage being classified as severely disabled.

It has long been recognized that spinal cord injured clients represent one of the most difficult groups to successfully rehabilitate. Success in these cases requires both quantity and quality services. The focus of the vocational rehabilitation program not only centers on the client, but must include his family, community, and environment.

In nearly every instance, the length of stay and the cost per case is greater for the spinal cord injured client. This Project endeavored to improve the delivery system by focusing on the unique needs of the SCI client. The Project planned to utilize existing systems and services, improve them where possible, and add new services to fill existing gaps.

In 1978, the Agency concluded a three year Innovation and Expansion Project (#25-P-15501/3-03) serving the spinal cord injured with primary emphasis on field rehabilitation services. This Project did not impact on the delivery system of services for the spinal cord injured at the WVRC.

Additionally, the completed Project served only three target counties of West Virginia's 55 counties. This Project proposed to serve all traumatically spinal cord injured clients who were admitted to the WVRC regardless of their county of residence.

Efforts were undertaken during the completed field-based SCI Project to develop a patient/family education program for SCI. The proposed SCI Project planned to capitalize on those unfinished efforts in the development and implementation of a SCI education program.

During the design of this proposed SCI Project, consideration was given to data and information obtained from the Regional Model SCI systems; on-site visits to a number of other comprehensive facilities serving the SCI--Woodrow Wilson Rehabilitation Cneter, Maryland Rehabilitation Center, etc.; and materials obtained from other facilities and organizations such as Rancho Los Amigos, the Veterans Administration, and others. Review of all this resource material seemed to support the design and objectives of this proposed Project.

Also reviewed was a study entitled Medical Rehabilitation Needs in West Virginia--1978 by Judith G. Greenwood, Ph. D., and R. John Pearson, M. B. This study was conducted by the West Virginia School of Medicine, Division of Community Medicine, in cooperation with the West Virginia State Medical Association. Dr. Greenwood cited a three to seven month waiting period for

WVRC admission. Her study cited an average length of stay on the Treatment Unit of five months for paraplegics and eleven months for quadriplegics.

Dr. Greenwood further stated that, "Thus the estimated current total hospitalization cost (considering the Treatment Unit at the Center in Institute as extended hospitalization) in West Virginia for a paraplegic is $34,000.00 and for a quadriplegic is $66,000.00. These estimates do not include physician fees, equipment, or vocational services."

The proposed Project design and objectives attempted to specifically address these areas. Improvements were anticipated in the waiting time for admission, average length of stay, and average cost per case.

The catastrophic nature of spinal cord injury impacts on every facet of the individual's life. A formal, structured WVRC program had not been established to meet the specialized and diverse needs of the spinal cord injured client.

Establishing a structured SCI program predicted the following results:

(1) assure that the needs of each SCI person were comprehensively assessed and addressed;

(2) ensure the continuity of services in a timely, sequential fashion - from WVRC admission to discharge and follow along.

The West Virginia Rehabilitation Center had experience in the development of special service programs for selected groups of severely disabled clients. Examples included special services and programs for the blind, the deaf, the mentally retarded, and persons with uncontrolled seizures. The present Project proposal presented another opportunity for the establishment of a special program for a severely disabled population, namely, the spinal cord injured client.

The Project did comply with Title VI of the Civil Rights Act of 1964 (P. L. 88-352) and Title V of the Rehabilitation Act of 1973. The proposed Project's activities were also within the scope of the approved West Virginia State Plan for vocational rehabilitation services for Fiscal Year 1979. That plan lists the Order of Selection in serving the severely disabled, and spinal cord injuries are listed third among the severely disabled.

CHAPTER 2

PROJECT PLAN

The West Virginia Division of Vocational Rehabilitation made application for and was awarded an Innovation and Expansion (I & E) Grant for a three year project beginning July 1, 1979, and ending June 30, 1982. The total requested Project budget was $151,528.00 for the first year. Allocated funds were never used for the physical therapist's position. It should be noted that the Innovation and Expansion Grant programs were discontinued after this Project became operational. Therefore, the Project was funded to its three year completion date under regular Agency auspices (Section 110 funds).

The Project budget provided for personnel, office supplies, office equipment, telephone service, audio-visual equipment, and travel. Office space was provided at no cost by the West Virginia Rehabilitation Center. Client services were purchased through the Center's client case service allocations.

The original Project proposal called for the following staff positions:

(1) Project Coordinator--one full time;

(2) Rehabilitation Nurse-Educator/Coordinator--one full time;

(3) Physical Therapist--one full time;

(4) Occupational Therapist--one full time;

(5) Secretary--one full time;

(6) Psychologist--one full time.

The Project's physical therapist's position was never filled. Initial recruitment efforts were unsuccessful because of the low salaries in effect under West Virginia Civil Service. As I & E funds dwindled and then disappeared, the Project was placed under regular Agency funding. This position was then lost because of spending and hiring freezes implemented in West Virginia State Government.

Specific Aims

The specific aims of the Project included the following:

(1) to strengthen and improve existing spinal cord injured services and programs at the West Virginia Rehabilitation Center;

(2) to develop new knowledge relating to the provision of rehabilitation facility services to a specific disability group;

(3) to enhance existing services and to develop new knowledge in vocational evaluation, vocational counseling, psychological evaluation/assessment/adjustment, vocational training, and job placement of spinal cord injured clients;

(4) to strengthen pre-service and in-service training opportunities for staff serving the spinal cord injured with the result being a decrease in the attrition and/or turnover rate with required manpower;

(5) to serve 90 spinal cord injured clients during the three year Project;

(6) to rehabilitate 23 spinal cord injured clients;

(7) to reduce the average length of stay of the spinal cord injured client on the W. Va. Rehabilitation Center's Treatment Unit which will result in greater numbers of SCI being served each year and a reduction in cost per case;

(8) to develop and utilize client/family education programs;

(9) to strengthen existing relationships with the Charleston Area Medical Center/General Division and its SCI Unit.

Methods and Procedures

The SCI Project at the WVRC worked with all traumatically spinal cord injured clients receiving Center services. Case service requirements and admission procedures were the same as for any case referred for WVRC services. As of September 15, 1978, the Center was actively serving 28 spinal cord injured clients, 21 of which were students with quadriplegia and 7 with paraplegia.

The services of the SCI Project at the WVRC included efforts at overall coordination of a comprehensive rehabilitation program to assure the timely delivery of services to meet individual client needs. Specific facility services included, but were not limited to:

(1) physical and occupational therapy services for improvement of functional capacity and potential in all areas to include activities of daily living;

(2) nursing services which will provide training in skin care, bowel and bladder programs, and personal hygiene;

(3) the fitting of and training with rehabilitation prosthetic and orthotic appliances;

(4) vocational evaluation and vocational training services;

(5) psychological and vocational assessment and support services including individual counseling, group counseling, and family counseling (psychological services available pre-Project were essentially diagnostic and evaluative in nature and scope);

(6) implementation of a patient/family education program with concurrent, appropriate social services;

(7) the assurance of comprehensive medical services to include physical/mental restoration services provided by Center staff, medical consultants, or services purchased in the community;

(8) staff development services.

When appropriate and feasible, efforts were made to provide the following services by the field operations program of the Agency in concert with WVRC staff and SCI Project staff:

(1) attendant care services;

(2) appropriate and accessible housing;

(3) job placement services;

(4) follow along services.

Services to family members were provided in part through the provision of family education services which were developed and made available as part of the Project design. Other services to family members will be provided where necessary to the adjustment and vocational rehabilitation of the spinal cord injured client.

Supplemental goals of the Project as a result of its specific aims and the methodology employed included the following:

(1) to maintain the momentum of services Statewide to the spinal cord injured individual from the knowledge gained from a recently completed three year innovation and expansion project focusing on SCI field services;

(2) to increase public awareness and understanding of the complexity of the provision of comprehensive vocational rehabilitation services to the spinal cord injured individual;

(3) to enhance positive attitudinal changes on the part of the staff, the spinal cord injured client, and his family in regard to the client's potential for ultimate job placement and reentry into the mainstream of the community.

Facilities Available

The SCI Project utilized up to 30 beds at the WVRC, Institute, WV. SCI clients using these 30 beds included those clients requiring rehabilitation Treatment Unit care, intermediate unit care, and special dormitory accommodations.

Those spinal cord injured clients requiring extensive nursing services and attendant care in order to obtain physical/mental restoration services were located in the existing rehabilitation Treatment Unit area of the Basic Rehabilitation Services Building. The "intermediate care facilities" for both males and females are located in close proximity to the more intensive rehabilitation Treatment Unit care area. The "female intermediate care unit" is located west of the nursing station on the first floor of the women's dormitory. The "male intermediate care unit" is located east of the nursing station on the first floor of the existing "G" Building which is a part of the male dormitory complex. Special dormitory accommodations are located on the ground floor within the existing women's dormitory and the men's dormitory complexes. Considerations there are the layout and construction of the bathroom facilities, personal hygiene and self-care equipment, and compliance with the code from the State Fire Marshall's Office.

It should further be noted that the WVRC, by virtue of its location in the Kanawha Valley, is located in close proximity to a number of acute care hospitals. The Kanawha Valley also contains a large number of medical specialists and other medical resources making procurement of services a relatively easy process. The Charleston Area Medical Center/General Division has an acute care facility for serving spinal cord injured individuals. The Project presented an opportunity for strengthening the relationship between this facility and the WVRC.

Project Staff

The Project staff consisted of five (5) full-time employees; the Project Coordinator, Rehabilitation Nurse-Educator, Psychologist, Occupational Therapist, and Secretary. In selecting the Project staff for these positions, it was important to select individuals with experience, skill, and interest in serving the spinal cord injured with emphasis in care and treatment, vocational evaluation and assessment, job analysis, job placement, and with enthusiasm and willingness to undergo in-service training at the onset of the Project operation. All personnel had to meet the requirements for Civil Service employees of the State of West Virginia.

All other existing staff working with Project clients were to coordinate their endeavors in a team approach with the Project coordinator. These staff included primarily the personnel responsible for nursing care, occupational and physical therapy, recreation, vocational evaluation and training, Sheltered Workshop services, medical treatment, and staff development.

The Project interfaced with all existing West Virginia Rehabilitation Center programs and resources, as well as the Agency's field operations.

The original Project Grant application made provisions for the following roles, duties, and functions of each Project staff member.

The Project Coordinator will:

(1) coordinate, direct, facilitate, and supervise the day-to-day operation of the Project;

(2) be responsible for Project and fiscal matters;

(3) identify need for Project changes.

(4) collect and compile data and coordinate research and evaluation;

(5) supervise other Project staff;

(6) may process referrals and screen applications, as a member of WVRC's Acceptance and Review Committee;

(7) compile background data and assist in the planning of the client's total program after initial evaluation;

(8) may recommend the referral of clients to other Center services after assessing their needs;

(9) may provide guidance and counseling as needed by client and family;

(10) may initiate and coordinate training and placement activities;

(11) perform other activities to be identified as Project progresses;

(12) may serve as liaison among Project staff, field operations staff, referring sponsor, WVRC staff, and SCI clients;

(13) coordinate SCI Project staff development functions;

(14) serve as the representative of the Project as it interacts with the community and other agencies or organizations and periodically attend SCI staffings of Charleston Area Medical Center/General Division;

(15) serve as a resource person to coordinate services with out-of-state rehabilitation facilities, such as, Woodrow Wilson Rehabilitation Center, Maryland Rehabilitation Center, Institute of Physical Medicine and Rehabilitation--Louisville, Kentucky, The Towers Facility, University of Virginia--Charlottesville, Virginia;

(16) be administratively responsible to the Assistant Administrator, Medical Services, West Virginia Rehabilitation Center.

The Psychologist will:

(1) carry a Project client caseload of all Project clients;

(2) consult with family members and the client (during the first phase of the family education program for spinal cord injured) the psychological aspects and adjustment factors of the disability;

(3) conduct psycho-diagnostic testing;

(4) conduct group counseling sessions;

(5) engage in family counseling between husband and wife, and children, if needed;

(6) assist Center counselor in individual counseling (direction) if needed;

(7) attend staffings;

(8) hold periodic family conferences;

(9) may serve on WVRC's Acceptance and Review Committee;

(10) advise nursing, physical therapy, occupational therapy, houseparent staff, and Center counselors regarding psychological approach on modifying behavior patterns, if needed.

(11) assist staff in understanding family dynamics involved between various family members;

(12) assist with vocational involvement;

(13) assist with additional staff development (in-service training needs of staff).

The Occupational Therapist will:

(1) participate in and assist with client/family education programs for SCI clients, family members, and significant others;

(2) plan, direct, and provide a comprehensive program of occupational therapy activities;

(3) assist in SCI Project staff development activities;

(4) provide expertise and recommendations for removal of environmental structural barriers, job site modifications, and job task modifications.

The Rehabilitation Nurse-Educator will:

(1) under the direction of the Project Coordinator, develop and implement a client/family education program for SCI clients and/or significant others;

(2) coordinate and supervise client education;

(3) assist with all SCI Project staff development activities;

(4) work in concert with all Project and Medical Services staff in total patient care activities;

(5) assist in discharge planning and follow along to assure continuity of post-discharge medical services.

The Secretary will:

(1) act as receptionist and perform all telephone answering functions since other staff will not be in their offices at all times;

(2) maintain records and files;

(3) type all necessary Project related materials;

(4) perform designated case aide functions.

CHAPTER 3

PROJECT ELIGIBILITY

Eligibility for SCI Project services included two criteria. One was that the individual was a client of the Division and was enrolled as a student at the WVRC. The second criteria was that the individual had sustained a traumatic spinal cord injury.

A traumatic etiology of injury would rule out congenital problems or diseases. Specific instances of ineligibility included the following disabilities: spina bifida; transverse myelitis, spinal tumors; Guillain-Barre' syndrome; etc.

The traumatic injury eligibility criteria does assure priority to those individuals with the most severe spinal cord injury. Traumatic cord injuries constitute the majority of those individuals with spinal cord impairments.

Traumatic spinal cord injuries also occur most frequently within the age groups that can legitimately qualify for vocational rehabilitation services and can benefit most from these services. National data show that 80 per cent are under age 40. The median age is 23 years and the mean is 29 years. The most common age is 20 years with 50 per cent of the injuries occurring in the 15-25 year old age group. This combination of early onset of injury coupled with the severe consequences of traumatic paralysis makes spinal cord injury a catastrophe in terms of human disability and social economics. Services for those clients with congenital disabilities or disease of the spinal cord would have substantially different implications than for those with traumatic injuries. Many of these individuals would not have the degree of loss in both motor and sensory function that the traumatic spinal cord injured person would have.

The Project coordinator and the rehabilitation nurse-educator certified spinal cord injured clients as Project eligible. A dual casefinding system was also in effect within the Center.

The Center registrar forwarded copies of all permanent record cards on clients registered at WVRC who appeared to have a listed disability of any sort which could have involved impairment or involvement of the spinal cord. Many of these individuals were not Project eligible, but this large scale screening gave assurance that it would be highly unlikely that a spinal cord injured client would enter the Center undetected by the Project staff.

The second system involved the Medical Services counselor who reviewed physical/mental restoration cases for the WVRC Admissions Committee. As this review was being conducted, copies of the Center's Initial Interview Forms were sent to the Project coordinator for referral purposes. Additionally, the Assistant Administrator of Medical Services provided a therapy call-in list to the Project coordinator. This list contained the client's name, disability, and WVRC admission date.

A comprehensive master list on all WVRC spinal cord injured clients was maintained by the Project coordinator. This was in addition to other data maintained and was reviewed and updated quarterly.

CHAPTER 4

STAFF TRAINING/PROFESSIONAL DEVELOPMENT ACTIVITIES

Training for professional rehabilitation staff who are providing or supervising direct client services is always a top priority. This is especially critical with the spinal cord injured client during his/her program at a comprehensive rehabilitation facility.

The Project secretary, occupational therapist, and coordinator were already employees of the Division of Vocational Rehabilitation working in the Medical Services Section of the West Virginia Rehabilitation Center and consequently had experience with our spinal cord injured clients. The Project nurse/educator and the psychologist were recruited from outside the Division. Sufficient time was provided after hiring to complete their new employee orientation. These two Project staff members also spent considerable time in reading and self-study about spinal cord injury. Time was also spent with other Center staff who had considerable expertise in spinal cord injury and with the SCI clients themselves.

The following is a listing of the significant training received by the Project staff during the length of the Project.

Project Staff Training Involving Two or More Staff Members

The entire SCI Project staff completed the Defensive Driving Course offered at the WVRC in 1979. This training was appropriate since it is a mandatory requirement to be permitted to drive a state owned vehicle. Project staff did utilize state vehicles for client transport.

Three Project staff members (coordinator, nurse, and secretary) attended the 1979 Annual Meeting of the National Spinal Cord Injury Foundation (now Association) in Denver, Colorado. We also had the opportunity to visit, tour, and speak with the Craig Rehabilitation Hospital staff about their SCI program. Two disabled WVRC student consumers also participated with us.

The Project nurse and occupational therapist attended a symposium on Comprehensive Spinal Cord Injury Services in Ellenville, New York, on October 14-17, 1979. This was an excellent program presented by the Eastern Paralyzed Veterans Association and added to their body of knowledge concerning the care and rehabilitation of the spinal cord injured individual.

The Project staff attended a training session at the Center concerning drug, alcohol, and substance abuse. This training was conducted by the Shawnee Hills staff. Shawnee Hills is the local community mental health-mental retardation center.

The entire Project staff received training on Management by Objectives and Results. This is the management system which the West Virginia Division of Vocational Rehabilitation has adopted and which is used Agency-wide. Additionally, the Project coordinator attended management training sessions which were designed for Medical Services department heads.

The Project O. T. and nurse attended the 1980 Annual Meeting of the American Spinal Injury Association in Anaheim, California, on May 8-11 and also toured Rancho Los Amigos Hospital. Papers were presented by physicians and other professionals working with spinal cord injured individuals. Abstract copies were made available from the Project staff, and copies were also shared with the SCI Team at Charleston Area Medical Center/General Division.

The Project coordinator, secretary and rehabilitation nurse from the SCI Unit at CAMC/General Division attended the 1980 Annual Meeting of the National Spinal Cord Injury Association in Orlando, Florida.

During the Project period, Project psychologist and secretary attended a seminar on Housing for the Handicapped.

The Project coordinator, secretary, WVRC's Driver's Education instructor, and a disabled consumer who is vice president of our local chapter attended the 1982 Annual Meeting of the National Spinal Cord Injury Association in Minneapolis, Minnesota. These annual meetings of the NSCIA are excellent programs with premier caliber presenters on their educational programs. An A-1 rating is given to these annual programs for anyone who has an interest in spinal cord injury.

The Project coordinator, secretary, psychologist, and WVRC Driver's Education instructor continue to serve as officers in the local chapter of the National Spinal Cord Injury Association.

Training Attended by Project Coordinator & Professional Affiliations

In June of 1980, the Project coordinator attended a workshop held by the Temple University Research & Training Center in Philadelphia, PA. The workshop participants developed a basic and an advanced training program for Vocational Rehabilitation staff working with spinal cord injured individuals. The basic course has been presented and was attended by one Vocational Rehabilitation counselor from West Virginia. This counselor indicated that the program was excellent and on target with his training needs.

The Project coordinator had the opportunity to participate in the 1980 Miss Wheelchair West Virginia Pageant as a judge. This was a very enjoyable assignment. This is the type of function which can do a great deal to dispel many of the myths about the handicapped.

The Project coordinator and one counselor from the Medical Services unit attended a two-day seminar at the Woodrow Wilson Rehabilitation Center in October of 1980. This program was presented by the Regional Model Spinal Cord Injury staff at Woodrow Wilson and was entitled "A Holistic Approach to Employment for Persons with Spinal Cord Injury."

The Project coordinator is entering his third year as President of the West Virginia Mountaineer Chapter of the National Spinal Cord Injury Association. This has been a mutually beneficial relationship in terms of coordination of efforts between the Project and the Chapter.

Additionally, the Project coordinator continues to serve as board member of the West Virginia Rehabilitation Counseling Association, is maintaining his Certified Rehabilitation Counselor status, and has completed the requirements for life membership in the National Rehabilitation Association.

Training Attended by Project Pyschologist & Professional Affiliations

The Project psychologist spent substantial time in the area of job development procedures. He attended two training sessions in Morgantown, WV, sponsored and conducted by the Division of Vocational Rehabilitation and focusing on the subject of Job Analysis and Job Placement. His primary focus in this area has been in the areas of job development for the severely disabled, as well as developing appropriate techniques to evaluate this population. Mr. Henderson also attended a meeting at George Washington University on Research Utilization. He felt that this program was beneficial in that additional research resources were located, particularly as they pertain to the spinal cord injured.

Mr. Henderson also made a field visit to the Job Development Laboratory at George Washington University. Mr. Mallik spent a great deal of time explaining their project and the procedures they used in developing jobs for the severely disabled. A great deal was learned on this field visit, and such an approach will hopefully be developed within the West Virginia Rehabilitation Center.

Mr. Henderson also participated in a meeting of the WVRC Vocational/Technical Training Services Advisory Committee. Participation in this meeting and plans for continued attendance with this group is designed to have input into their planning, as well as to obtain assistance from this group in locating job placement possibilities for the spinal cord injured. Also, areas such as development of additional training areas for the severely disabled are emphasized.

A seminar on "Managing Disruptive Behavior" was also attended by Mr. Henderson. This seminar, dealing primarily with the use of behavioral modification techniques, was attended as part of a Center-wide in-service training program wherein two staff members from each area of the WVRC were selected to attend and represent that area. A total of six participants from the WVRC were in attendance.

The Project psychologist participated in a one-day seminar for postal employees on the topic of Affirmative Action and Employment of the Handicapped.

The SCI Project psychologist attended and participated in the State Conference in Beckley, WV, in the fall of 1980. His role at the State Conference was to aid in the presentation to the rehabilitation staff of the new Diagnostic and Statistical Manual of the American Psychiatric Association.

A one-day training session was attended by the SCI Project psychologist on CPR training. As a result of this training, he was certified in this technique.

During the summer of 1982, the SCI Project psychologist participated in the following training activities: (1) attended a depression seminar with Dr. Russell Heinlein, Center psychiatric consultant, presenting; (2) participated in a day-long training seminar to be recertified in CPR.

During the course of this Project, the Project psychologist also achieved licensure as a psychologist with the state of West Virginia.

Mr. Henderson is a member of the West Virginia Psychological Association. He also serves on the board of directors of the local chapter of the National Spinal Cord Injury Association.

Training Attended by Project Occupational Therapist & Professional Affiliations

During the fall of 1979, the Project occupational therapist attended a training session on urinary appliances and equipment sponsored by Urocare.

The Project O. T. attended a WVRC Journal Club meeting where a presentation was given by Mr. Ron Cockeram from the WVRC's Vocational Evaluation unit. Mrs. Ingram felt that this was a worthwhile presentation inasmuch as many of our SCI students are potential candidates for the Vocational Evaluation program.

The Project O. T. attended a sensory integration workshop on September 20-21, 1980. This workshop was sponsored by the W. Va. Occupational Therapy Association.

During the fall of 1980, the Project O. T. attended a WVRC in-service session given by the Center's physiatrist on electromyelography. She also attended a workshop on administrative practices sponsored by the West Virginia Rehabilitation Association and the annual meeting of the American Occupational Therapy Association. She also attended an in-service WVRC session on the transcutaneous nerve stimulator.

In March of 1982, the Project O. T. attended a one-hour in-service training session on depression at WVRC sponsored by the Agency.

The Project O. T. was recertified in CPR during the summer of 1982. She also attended a WVRC training session on utilization of the behavioral checklist. She also continues to be licensed by the state of West Virginia and maintains her professional status with the National Occupational Therapy Association.

Training Attended by Project Rehabilitation Nurse-Educator & Professional Affiliations

The Project nurse completed a graduate course in 1979 offered at the College of Graduate Studies. The course was entitled "Psychological Aspects of Physical and Medical Disorders." The course was taught by John Linton, Ph. D., and David Clayman, Ph. D. Both of these gentlemen are from the Behavioral Medicine Department of West Virginia University. Dr. Linton also works with the SCI Unit at CAMC/General Division.

The SCI Project nurse attended a meeting of the Association of Rehabilitation Nurses. The guest speaker gave a lecture on skin care. This session was videotaped and edited for use with the SCI Project clients.

On June 13, 1980, Mrs. Harrison attended a Patient/Family Education Seminar in Huntington, WV, sponsored by Marshall University. This was very helpful to her in the areas of how to best teach adults, how to make a good nursing assessment of what needs to be taught, and the various audio-visual aids that can be utilized for teaching purposes. She also attended quarterly meetings of a group of rehabilitation and chronic care nurses who met to share ideas and present various programs. These meetings may eventually evolve into a state chapter of the Association of Rehabilitation Nurses.

On September 27, 1980, the Project nurse attended a seminar entitled "Spinal Cord Injuries: Implications for Nursing Care." This was presented at Cabell-Huntington Hospital by their staff development personnel. Mrs. Harrison was pleased to learn that Cabell-Huntington Hospital nurses are interested in spinal cord injury. They feel inadequate regarding their role in the care of SCI patients. They were interested and motivated enough to set up this workshop and had done a great of research on the subject. It was evident that they did not have the practical experience that most speakers on SCI have had, but their motivation was high. They have a staff development program now, and the nurse doing the patient education program and the head of the staff development program are planning a trip to CAMC/General Division and the WVRC to see how we deal with SCI. This will be a good step toward linking the acute care stage with the recovery stage and then to the rehabilitation stage. The spinal cord injured patient will greatly benefit from this type of communication between nurses and will hopefully be better educated by the time he goes to a rehabilitation center or goes home. These nurses see the importance of patient-family education and are trying very hard to incorporate this into the daily routine at their hospital, in spite of a lack of physician interest and support.

The SCI Project staff provided the Cabell-Huntington staff a great deal of information on sexuality and sexual functioning of the spinal cord injured patient. The movie "Changes" was shown which was borrowed from the WVRC; and Barry Hamilton, who is a clinical psychologist and a paraplegic, spoke to the group. They enjoyed this very much, as it added a new dimension to their view of a spinal cord injured person.

Since nurses are a vital part of any patient's recovery and attitude, Mrs. Harrison was glad to see their interest in the SCI patient. Hopefully, Mrs. Harrison helped establish a link in communication between WVRC and Cabell-Huntington Hospital that will benefit any future spinal cord injured client referred to us from that facility.

The Project nurse participated in in-service training at the WVRC. The Center's physiatrist gave a lecture and demonstration on electromyelography and transcutaneous nerve stimulators.

During the fall of 1980, the SCI Project nurse attended a lecture by Dr. Robert Kerns on dealing with psychiatric emergencies. She also attended a presentation on nursing care plans given by Mrs. Linda Hennig, R. N., M. A. With a member of our Staff Development unit, Mrs. Harrison spent several days at the Woodrow Wilson Rehabilitation Center. The purpose of the visit was to obtain information on their Rehabilitation Technician Training program and to discuss other aspects of their nursing and medical programs.

The SCI Project nurse continues to work on an M. A. degree in Counseling and Guidance at Marshall University. She applied and was accepted to the West Virginia University School of Nursing Graduate Program in their extension Master's program being implemented in Charleston in the fall of 1982. She also took CPR training for review and recertification during the summer of 1982.

Mrs. Harrison continues her membership in the local chapter of the National Spinal Cord Injury Association and did serve as a board member for one year.

Training Attended by Project Secretary & Professional Affiliations

The Project secretary and the rehabilitation nurse from CAMC/General Division's SCI Unit attended the 1981 Annual Meeting of the National Spinal Cord Injury Association in Cincinnati. Ohio. Two disabled consumers from our local chapter of the NSCIA also attended.

The Project secretary attended a workshop on Implementation of Section 504 which was held in Charleston, WV, September 13-16, 1979.

The SCI Project secretary is actively involved in the local chapter of the National Spinal Cord Injury Association and presently serves as Corresponding Secretary for the organization. She is also a member of the National Rehabilitation Association, West Virginia Rehabilitation Association, National Association of Rehabilitation Secretaries, and Mountaineer Association of Rehabilitation Secretaries. She is also presently a candidate for the WVRA board.

CHAPTER 5

SCI PROJECT STAFF DEVELOPMENT ACTIVITIES

During the orientation period, the SCI nurse felt the need for a more detailed job description than was written in the grant proposal. This was written by the nurse and followed throughout the Project with some additions and modifications. This job description can be used as a guideline for the future should the position of nurse-educator become a permanent one at the WVRC or as a reference for other facilities.

The nurse helped coordinate, with the Project psychologist, a series of meetings with Russell Heinlein, M. D., WVRC, and the Treatment Unit staff to discuss problems, frustrations, and possible solutions. Feedback from the meetings was channeled to administration. The SCI nurse and the Treatment Unit staff felt these meetings were beneficial.

The nurse held in-service classes for the Treatment Unit staff at the request of the Director of Nurses. She also attended some of the Treatment Unit's in-service programs.

The client/family education classes were open to all staff, and many field and Center staff attended. The counseling staff, in particular, were well represented and indicated they learned a great deal about spinal cord injury and its effects by attending these classes.

The SCI nurse acted as a resource person regarding spinal cord injury to field staff, interns, students, hospitals, former clients and families, as well as to the Center staff. She spoke on SCI to numerous groups, such as nursing students, who visited the Center.

She also assisted the Project coordinator with a presentation on SCI to the Social Security Administration staff in Charleston at their district meeting.

A presentation was made at the East Bank High School with the Project nurse, psychologist, coordinator, and a panel of four SCI clients from WVRC, one of whom was an alumni of that school. The focus of the program was causes and consequences of spinal cord injury.

A nursing manual was written by the SCI nurse called "Care of the Patient with Spinal Cord Injury." It was felt that the severity of this disability and the care involved warranted a manual of this nature to facilitate care and teaching of individuals with this type of disability.

The Project nurse toured Woodrow Wilson Rehabilitation Center with particular emphasis on learning about their Rehabilitation Technician program to help determine the feasibility of implementing a similar program at WVRC. The trip to WWRC was interesting and informative. The Rehabilitation Technician program there was successful in terms of improving ability and knowledge; and, in the state of Virginia, it allowed WWRC to increase the salary of those employees who satisfactorily completed the program. However, it seemed likely that this was not going to continue due to budget cuts. A report of this program was given to the Chief of Staff Development upon return.

Problems/Recommendations

The position of a nurse-educator was a new one at the onset of the Project. The job description written by the nurse for this position should apply to any nurse in rehabilitation nursing and could be used as a guideline for a nurse-educator if this position becomes a permanent one. Since rehabilitation nursing involves a great deal of teaching, this position was badly needed and should be expanded to cover other disabilities besides spinal cord injury. It is also recommended that a staff education program be planned and coordinated by this nurse-educator.

There were no problems from the nurse's point of view regarding the weekly meetings with Dr. Heinlein in the beginning weeks of the SCI Project. The Treatment Unit staff felt that it helped to talk about some of their problems and frustrations and were beginning to talk about ways to deal with some of their feelings when the sessions were abruptly terminated by Dr. Leslie McCoy, who was Medical Director of WVRC at that time. No definite reason was given to the nurse except that the usefulness of these sessions was questioned.

The following problems were noted with the Rehabilitation Technician program. It was found that no salary increase could be given for our employees desiring to enter into a formal Rehabilitation Technician training program. Since the main incentive for those entering this program at Woodrow Wilson Rehabilitation Center was the increase in pay, this program was not pursued at WVRC. It was also noted by the SCI nurse that she was the nurse who was expected to plan this program and teach the classes. When it was explained by the nurse that she would not be able to do this and carry out her duties as the SCI Project nurse at the same time, the program never seemed to get out of the discussion stage.

It was noted by the nurse, as she served as a resource person for various DVR staff, how little some staff members working with the SCI client knew about the disability. This was particularly true of some field staff. Most appeared to know little of the health problems that beset the spinal cord injured, such as skin, bowel and bladder management, and prevention of problems. Since good health is essential to all people with regard to working, playing, and living a useful life, more emphasis was placed on health care and preventive measures; and staff support of these educational aspects was sought.

No problems were encountered by the SCI nurse with regard to attending various seminars and programs on spinal cord injury. The Agency was willing to allow the nurse to take advantage of these learning opportunities. She, in turn, returned from these seminars and shared the information she obtained with staff and clients.

JOB DESCRIPTION - SCI PROJECT NURSE

I. Initial Interview - See each new SCI client within the first week of admission for "get-acquainted" meeting. Will not attempt to start teaching on this initial visit, but will try and answer any questions client may have at this time.

A. Getting acquainted

1. Gather as much information as is available before meeting client such as:

   a. how and when injury occurred;
   b. where he came to us from, i. e., home, nursing home, another rehabilitation unit, hospital;
   c. how much he knows regarding extent of injury, prognosis, the Center and its function;
   d. how much family knows regarding injury and prognosis;
   e. how much he's been taught regarding his self-care.

2. Start conversation by introducing myself and briefly describe my role regarding his care and teaching. Ask general questions relating to above information plus,

   a. ask about his family, his previous lifestyle, work, hobbies, education and/or training, interests;
   b. ascertain how much he knows about the Center, what he expects from us, what his immediate needs are regarding acclimation to his new environment;
   c. compare his comments with what available information says.

II. Nursing Assessment

A. Physical condition

1. Review chart regarding disability, medical problems, nurses notes, etc.

2. Know level of injury - find out what motor and sensory deficits are present.

3. Assess level of self-care.

4. Establish whether any other disabilities are present and if any secondary diagnoses, allergies, injuries are present.

5. Take note of vital signs to see if normal or abnormal.

6. Assess respiratory function - dyspnea, diaphragmatic or abdominal breathing, cough, labored respirations.

7. Assess bowel and bladder function - what drainage system is present, bowel program, problems, etc.

8. Inspect skin and note condition.

9. Inspect extremities for contractures, footdrop, condition of fingernails and toenails, discoloration, edema.

10. Assess presence or absence of spasms, extent and frequency.

11. Diet problems - fluid intake, appetite, need for special diet, such as diabetic, low sodium, low calorie, and refer any problems to dietician.

12. Review medications, special treatments.

B. Psychological assessment from nursing standpoint

1. Communication skills

   a. Speech, hearing, or visual problems.
   b. Level of understanding.
   c. Educational level - reading and writing skills.

2. Behavior

   a. Determine initial attitude: adjustment, self-confidence, anxiety, maturity, assertiveness, apprehension, motivation.
   b. Note his reaction to his new environment, roommates, staff, family, his proposed program.

III. Write up care plan to include the following: (Will not write on nursing staff's cardex card - will use a separate card)

A. Brief profile of client to include

1. name, age, date of injury, cause of injury;

2. diagnosis and level of injury;

3. secondary diagnoses and allergies;

4. counselor's name;

5. client's home phone number;

6. diet;

7. activity level and self-care status.

B. Establish care plan to include

1. immediate needs to be met, both psychological and physical;

2. imminent teaching modules that need implementing - needs & goals;

3. for SCI nurse's information, client's therapy schedule, appointments, etc., so teaching can be arranged.

IV. Write initial interview note and nursing assessment on nurses' notes. (Will use separate sheet so will not interfere with routine notes by nursing staff)

V. Implementation of teaching plan in cooperation with nursing staff.

A. Schedule frequent visits during first few weeks for teaching purposes. The following teaching modules will be implemented by nursing staff and reinforced by SCI nurse.

1. Bowel management - explain bowel program: suppositories, digital stimulation, importance of diet and regular routine - reinforce instructions and establish success or failure.

2. Bladder program - reinforce nursing staff regarding external catheters, intermittent catheterization, drainage systems, prevention of infections and stones. Teach client how to care for drainage system himself and instruct on voiding techniques and catheterization according to physician's orders. Help Treatment Unit staff supervise client until assured he can handle it properly. Teach regarding urinary pH and how to recognize signs of infection. Instruct on intake and output and need for increased or decreased fluids when necessary.

3. Teach signs and symptoms of autonomic dysreflexia and how to handle it. How to deal with pain, parasthesias, and spasms.

4. Skin care - inspect skin frequently and teach patient how to do this. Instruct on prevention of pressure sores and why good skin care is important. Reinforce importance of turning schedule and prone position. Teach importance of foot care. Check skin around braces, tongs, etc.

5. Sexual functioning - will discuss objectively and answer questions; will refer to psychologist and physician for detailed discussion.

6. Discuss prevention of respiratory problems; need for flu shots, dressing appropriately, avoiding contact with people with upper respiratory infections.

7. Teach importance of medication and possible side effects, especially regarding mixing medication with alcohol and importance of avoiding dependency.

8. Continually urge client to do as much self-care and decision making as possible, checking frequently with O. T. and P. T. regarding his progress in these areas.

9. Reinforce care of supplies and equipment and how to conserve.

VI. Follow-up - Keep files in SCI nurse's office.

A. Nurses' notes: record needs and goals and evaluate progress made in each area. Note family's participation. Include problems and possible solutions. These will be non-routine notes--routine care to be recorded on nurses' notes.

B. Incorporate family, where possible, in teaching about client's care. Encourage family's participation in Family Education Program that is being implemented for whole Center. Set up schedule with family for discussions and teaching sessions and do family assessment regarding intelligence, interest, resourcefulness, dependency, stability, and expectations. Explain and reassure family regarding personality and physical changes.

C. Periodically record client's adjustment to Center and therapy program. Note whether or not goals are being met, obstacles, behavior problems, status changes. Work with other departments toward as much self-care as possible.

D. Prepare family and client for first visit home, along with occupational therapist - assess home needs, by visit if necessary, and provide them with information and supplies. Provide names and/or phone numbers where help can be obtained.

VII. Discharge planning and follow-up

A. Work with O. T. and P. T. regarding home needs, supplies.

B. Provide instruction sheets and list of facilities and resources in community that client can utilize - doctors, clinics, health nurses, drug stores, medical suppliers.

C. Participate in family conference prior to discharge incorporating all disciplines involved in client's care.

D. Reassure client and family that they can keep in touch with us if necessary. Perhaps SCI staff can call or send a note occasionally to see how he's doing; home visit if necessary.

VIII. Related duties

A. Serve as liaison for client between nursing staff, physicians, O. T., P. T., and counselors, as well as helping reinforce their programs so that client's entire program goes as smoothly as possible.

B. Will contact dorm clients and provide help related to health problems if necessary.

C. Will keep problem list that administrative department should be made aware of.

D. Help with in-service education in cooperation with nursing staff.

E. Help improve on information exchange systems with other SCI units.

F. Attend meetings and tour other facilities relating to care of SCI patients to learn and improve our system.

G. Help coordinate, implement, and participate in Family Education Program as it applies to SCI clients.

H. Attend medical staffings.

I. Attend Prosthetic/Orthotic Clinic if necessary; in relation to needs of a particular SCI client.

J. When the physiatrist is available, will work with him to provide better medical services to SCI clients.

K. Keep files on all SCI cients and what was done for Project evaluation.

PROJECTS TO WORK ON IN FUTURE

1. Set up schedule to do checking and teaching of SCI clients geared to each client's individual needs, not interfering with other programs.
2. Cardex and progress notes - care plans, nursing assessment and evaluation.
3. Family teaching - coordinate and implement a client/family education program under SCI Project's direction.
4. Procedure manual for SCI patients.
5. Written instruction sheets for client and families for home use.
6. Home visits - prior to first visit home and follow-up if necessary.
7. Compile list of pharmacies, home health agencies, clinics, medical suppliers, etc., available in client's home area where he can obtain help.
8. Help with in-service education and staff development activities.
9. Improve on information exchange system with other SCI units.
10. Try to get system devised to provide family physicians, health nurses, and field counselors with discharge summary when client is terminated.

The SCI Project occupational therapist participated in a videotaping session to be used for new student orientation at WVRC. The main emphasis was a brief introduction to spinal injury and the do's and don't's of approaching someone in a wheelchair.

Because many individuals with quadriplegia have difficulty feeding themselves and use various feeding aids, the O. T. spoke with the WVRC food service staff on five separate occasions relating possible needs of the SCI client. This therapist felt these sessions were very productive. WVRC Food Service staff and students in this training area were appreciative to know more about SCI and the adaptive equipment they use.

Recommendations

An occupational therapist should talk to each group of Food Service trainees who assist clients during meals in the cafeteria. New employees of Food Service also need to be invited to these sessions. Because meals should be enjoyable periods of the client's day, staff must be aware of the problems which might decrease the client's pleasure and functional ability.

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The occupational therapist spoke with the instructor for nursing assistant trainees regarding the self-care needs and limitations of the SCI individual. The O. T. Department continually had to speak one-to-one with Treatment Unit staff when clients were not being encouraged to implement self-care skills learned in the O. T. Department.

Recommendations

Because carry over on the Treatment Unit of newly learned skills reinforces client learning, the O. T. Department should work closely with the nursing assistant training area to better enable the staff to promote maximal client functioning. Newly employed staff should be encouraged to attend such training sessions.

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The Project O. T. completed a home evaluation checklist for use by the O. T. Department (copy attached). It was designed to gain detailed home information to assist the therapists in recommending home modifications and equipment. The checklist has been adopted by the O. T. Department Chief and is now incorporated in the O. T. Department procedure manual. It was designed in subsection units for the convenience of family and therapists. The form is self-explanatory and can be mailed to the family for completion, and then modification and equipment recommendations can be made prior to the client's termination date. Experience has revealed that ideally the client should be in the home when the evaluation is completed.

Recommendations

The form content and design should be re-evaluated following a trial period, for example, after 10 uses, and modifications made if necessary.

It was the occupational therapist's goal to provide a slide series visualizing many various structural and architectural barriers in home and community settings. The slides would be shown to groups of clients for identification of potential problems to be followed up by discussion and directions for modification of the settings.

An extensive literature search was done to determine if this type of instrument was in existence. Several general checklists exist, but they were without audio-visual instruction material. One audio-visual teaching tool and checklist was discovered. The slide set with audiocassette and written script has a purchase price of $110, with previews for $11, and illustrated manual for above at a cost of $5. These materials can be purchased from:

Health Sciences Learning Resources Center
T-262 Health Sciences Building SB-56
University of Washington
Seattle, Washington 98195

The Visual Instruction Module (VIM) describes common home situations which become obstacles to someone using a standard-sized wheelchair and discusses how to modify a typical home for wheelchair use. Basic concepts of space in terms of mobility and the size of the wheelchair are illustrated. Some of the topics included are (1) entrance barriers, (2) stairs and handrails, (3) floor surfaces and room arrangements, (4) bathroom design, (5) appliances and working areas, and (6) positioning of shelves, mirrors, furniture, and electrical controls. A controlled study to validate the effectiveness of the instrument was completed with SCI persons at the University of Washington School of Medicine and did reveal a greater incidence of barrier awareness following use of the VIM.

Because of the staff shortage in the O. T. Department, further study of the possible development of this training module was not done.

Recommendations

This therapist suggested that the VIM be purchased for use and expanded by including community setting slides. Because of the West Virginia government freeze on purchasing, the VIM was not recommended for purchase. The acquisition of the VIM unit would benefit all clients who use wheelchairs and mobility aids.

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Responding to many client requests on information about spinal cord injury, a library area was established in the O. T. Department. A wall hung shelf was installed in the department, and it contains a wide variety of information including basic anatomy explanations, home care manuals, recreation, research, self-help device catalogs, vocational placement, and related news articles. This area is often a stopping place for students when they are not attending therapies, evaluation, educational classes, or other structured programs. Many items have been checked out for overnight and weekend reading. From reviewing the materials requested and checked out, clients have a great deal of interest in research relating to repair of the spinal cord, sexual dysfunction, and recreational opportunities. Since the material is available in the O. T. Department, the clients often discuss with their therapists the articles read. Often medical terminology must be translated into layman's terms for complete client understanding.

Recommendations

This service should definitely be continued and retained in the Medical Services unit. It could be kept current by contributions from any member of the Agency staff. It should be retained in the Medical Services unit to provide clients with an immediate resource for any questions they might have.

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The occupational therapist has spoken to various groups on tour or doing placement work at WVRC including:

(1) WVRC physical therapy interns;
(2) W. Va. University physical therapy students;
(3) West Virginia State College recreation interns;
(4) groups of nurses from area universities and colleges;
(5) social workers;
(6) foster grandparents;
(7) various groups from schools, community organizations, and government agencies.

The occupational therapist assisted the W. Va. Department of Health public nurses in acquiring information about and samples of self-care devices used by cord injured and other disabled people to be displayed at a training workshop.

The Project O. T. was called by a representative of the West Virginia University/Charleston Area Medical Center/ICU/CCU nursing unit regarding how nursing can minimize or prevent potential rehabilitation problems such as contractures and bedsores. Information was also requested regarding sexuality and potential sexual problems of the spinal cord injured person.

WEST VIRGINIA REHABILITATION CENTER HOME EVALUATION

*Can the disabled person use? If no, complete below section.

1. General information (check one)

A. Mobility: manual wheelchair____ electric wheelchair ____ walker ____
cane(s)____ none____

B. Home ownership: self-owned____ rental unit____

C. Type of home: one-story____ two or more story____ split level____
tri-level____ apartment____ trailer____

D. Can all needs be met on main level (regarding bathing, food preparation, eating, and sleeping)? Yes____ No____

E. Inside plumbing? Yes____ No____

II. Outside of Home* Yes____ No____

A. Describe terrain around home (e.g., patios, porches, hills, etc.; include sketch, measurements of approach to entrances with walks, fences, shrubs, driveways, etc.)

____

____

____

Surface of driveway________________ walkway(s)________________________

B. Entrances________________ Number of____________

(1) Main Entrance* Yes____ No____

Type of door: swing out____ swing in____ sliding____

Height of entrance (ground to base of floor) _______ inches

Steps: Yes____ No____ Number of steps_____

Height of each step____ Width of each step____

Hand rail(s): Yes____ No____ Location: Right____ Left____ Both____

Is ramping possible? Yes____ No____ (one foot length for every inch of rise) Yes____ No____

(2) Other Entrances* Yes____ No____

Type of door___________ steps height______ width______

handrail(s)__________ operate door lock______ handle______

III. Garage or carport* Yes____ No____

Attached____ Underground____ Separate____ One car____ Two car____ Other____

Garage door: Manual____ Electronic____ Opening width____

Is there space for a wheelchair (4 feet) beside car? Yes____ No____

Steps to house: Yes____ No____ Number of steps____ Height of steps____

Width of steps____

Type of walkway if unattached____

IV. Inside Home* Yes____ No____

Note presence of location - steps, door sill, and height

____

A. Elevator* Yes____ No____ Does not apply____ Button height____

B. Lobby* Yes____ No____ Does not apply____ Width____ Length____

Floor cover type_________________ Lighting__________________________

Obstructions____

C. Hallways* Yes____ No____ Width____ Length____ Floor covering type_____ _________ Lighting__________________ Obstructions__________________

D. Communications & Recreation* Yes____ No____

Telephone location_________________ Type: Wall____ Desk____ Push button____ Rotary Dial____ TV location__________________________ Stereo location_________________________ Other___________________________

E. Type of heating and where located* Yes____ No____

Radiators____ Floor furnace____ Oil or gas stove____ Fireplace____

Forced air____ Location of thermostat_________________________________

F. Type of Cooling* Yes____ No____

Central air: Yes____ No____ Location of thermostat____________________

Window air conditioner: Yes____ No____ Where?_______________________

Fans & where____

G. Living Room* Yes____ No____

Door widths______________________ Floor covering_____________________

Location of light switches____

Location of electrical outlets____

Can wheelchair be maneuvered in, throughout, and out of room? Yes____ No____ Why____

Is there a couch or chair comfortable for client to sit in? Seat height from floor__________________

H. Bedroom* Yes____ No____ No. of steps____ Height____ Width____ Handrail(s) ____

Floor: Carpet____ Linoleum____ Wood____ Concrete____

Closet: Built-in____ Wardrobe____ None____

Bed: Twin____ Double____ Waterbed____ Other__________________

Electric____ Casters____ Locking____

Height from floor to top of mattress _____ inches

Is mattress: Firm____ Soft____

Is there a bedside table or dresser close to bed? Yes___ No____

Can all drawers by opened? Yes____ No____

Location of electric outlets____

Location of lights and switches_____________________________________

Windows________ Can client open and close? Yes____ No____

If another room in home is more usable than your previous bedroom, describe it. ____

I. Bathroom* Yes____ No____ Indoor____ Outdoor____ Does wheelchair fit into bathroom? Yes____ No____ Can door be closed with wheelchair inside? Yes____ No____ Floor covering__________________ Door width______________

Are there other items in bathroom to prevent use? Yes____ No____ If yes, describe. ____

Location of light switch____

Location of electrical outlets_______________________________________

Sink: Height_______ Enclosed______ Open Vanity______

Is client able to reach and turn on faucets? Yes____ No____ Use mirror? Yes____ No____ Width of sink edge or counter_______ Are pipes enclosed? Yes____ No____ Toilet: Can wheelchair be wheeled directly to toilet for transfer? Yes___ No____ Toilet seat height from floor____

Are there bars or sturdy support beside toilet? Yes____ No____ If yes, describe. ____

Is there room for grab bar(s)? Yes____ No____

Is toilet other than standard? Yes____ No____

Is storage for supplies available to client? Yes____ No____

Tub/Shower: Shower only____ Tub only____ Shower/tub combination____

Does wheelchair wheel directly to tub/shower for transfer? Yes____ No____

If no, why? ____

Width of tub edge_____ Shower stall width____ Depth____

Type of closure: Curtain____ Doors____ Non-skid surface____

Appliques on tub/shower floor? Yes____ No____

Independent shower: Stall____ Roll-in____ Door width____

Entrance lip: Height______ Width______

Bars or sturdy supports present beside tub/shower? Yes____ No____

Can client manage tub faucets & drain plug? Yes____ No____

J. Kitchen* Yes____ No____

Floor covering type_______________ Location of light switches____________

Location of electrical outlets_______________________________________

Table: Height______ Clearance under table________
Regrigerator: Freezer - Top____ Bottom____ Side by Side____
Handle height from floor_______
Sink: Height from floor________ Depth of bowel_______
Bowl type: Single____ Double____
Garbage disposal: Yes____ No____ Location of switch____________________
Faucets: Single____ Double____ Type of handle________________________
Distance from faucet handles to front of counter________________________
Dish washer: Top load____ Front load____ Portable____ Installed____
Stove: Electric____ Gas____ Pilot____ Automatic Pilot____
Distance from controls to front edge ________
Height from floor to front burner surface_________
Oven: Under range____ Wall type____ Broiler location__________________
Microwave: Yes____ No____ Location____
Cabinets: Over counter____ Under counter____ Wall____ Pantry____
Can everyday used items be reached (plates, silverware, glasses, cups, pans, food supplies)? Yes____ No____

K. Cleaning storage* Yes____ No____

Storage location: mop, broom, pail, sponges___________________________________
Cleaning agents__________________ Vacuum cleaner______________________________

L. Laundry* Yes____ No____

Washer: Agitator____ Wringer____ Distance of controls from edge______ front opening____ top loading____ Location of soap powder___________________
Faucet location for wash tubs____
Automatic dyer____ Lines____ Outside____ Inside____ Location__________
Distance of controls from front edge__________

V. General
Possibly dangerous loose rugs? Yes____ No____
Electrical cords in any walkway? Yes____ No____
Loose flooring, carpeting, tile, linoleum? Yes____ No____ Where__________________
Highly waxed floors? Yes____ No____
Sharp edge furniture? Yes____ No____ Where____

VI. Floor Plan (complete only when requested)
Accurate sketch of floor plan, garage entrance, and approach to house, including dimensions. Detail is especially important when any problems exist. Includes placement of furniture, directions doors open, width of doors and hallways.

The SCI Project psychologist also had responsibilities for staff development activities. A great deal of effort went into staff training during the Project. The following training was provided:

1. Two training seminars were conducted for the evening WVRC staff. The first session was on attitudes, and the second meeting was on the neurological basis of behavior.

2. Conducted staff training for WVRC dormitory staff and vocational training instructors on the topic of behavior management.

3. Presented training session to WVRC recreation staff and recreation interns on the topic of reality therapy.

4. Arranged and participated in a training session on the Preliminary Diagnostic Questionnaire (PDQ). This instrument is of potential help in establishing a rehabilitation plan for each Center student.

5. Presented a program to WVRC counselors on (a) Center procedures for students with specific learning disabilities and (b) how to write a referral to psychological services staff.

6. Arranged for Centerwide seminar on the topic of handling psychiatric emergencies.

7. Psychologist, with several students, presented a panel discussion on traumatic injuries to a class of physical therapy students from West Virginia University.

8. Completed a series of workshops to Center staff on grief reactions and reactions to traumatic injuries.

9. With technical assistance from other staff members, a videotape was produced on the topic of head injuries. This videotape was used in training of Treatment Unit staff.

CHAPTER 6

PATIENT CARE ACTIVITIES: NURSING

After an initial period of orientation, assessment of needs, and establishing a more detailed job description, the SCI nurse began seeing and keeping a file on all SCI clients admitted to the Center. She and the SCI Project coordinator certified SCI clients as Project eligible by reviewing the file for evidence that the client sustained a traumatic injury to the spinal cord.

A nursing information sheet (Page 41) was designed and used by the SCI Project nurse for each admission, and progress notes were written as necessary. Pertinent information was also charted on the nurses' notes on the Treatment Unit, and a care plan was written for each SCI client residing on the Treatment Unit.

All SCI clients were seen on a one-to-one basis by the SCI nurse for individual teaching. Written educational material was handed out until the self-care manual was completed. Pre and post tests were given and reviewed with every client who was willing to take them. SCI clients from the training areas were also seen. The training students' counselors were relied upon in the beginning to refer their SCI clients for teaching and follow-up. The SCI nurse did not receive these referrals, so she contacted those clients personally for teaching, follow-up, and class attendance. It was found that many of them needed further education beyond what they had previously received and that many had either forgotten or not followed through on what they had learned the "first time around." Many of those clients admitted to the dorm had not had a urological check-up in months or years, and the routine orders in the Clinic did not include this as did the Treatment Unit protocol. A urine culture was then included as part of the routine orders on all SCI clients entering the dorm. If necessary, they were referred to the urologist for treatment and follow-up.

At the beginning of the SCI Project, the SCI nurse attended weekly staffings and found this to be a long process that included discussion of the entire caseload of a particular counselor. All departments closed down every Wednesday afternoon. The clients did not attend this staffing and had no input into their programs, progress, or problems except through their counselors. This method of staffing appeared to the SCI team to be non-productive for many of the staff. Exclusion of the clients negates the staff's reason for being here. Team staffings were instituted using the SCI clients as a pilot-type study for this type of staffing. The client and only those staff members working with him were team members with the counselor continuing in the role of "team leader." The client, as part of the team, could be instrumental in developing and maintaining his rehabilitation program. This method also eliminated the closing down of various departments for a half day per week, and staff members not involved with a particular client did not have to sit and listen to information regarding clients they did not know. This staffing pattern was eventually adopted for all therapy clients and was recommended for training students, also. However, this has yet to be instituted. The SCI nurse also attended all family conferences of SCI clients and did individual family teaching.

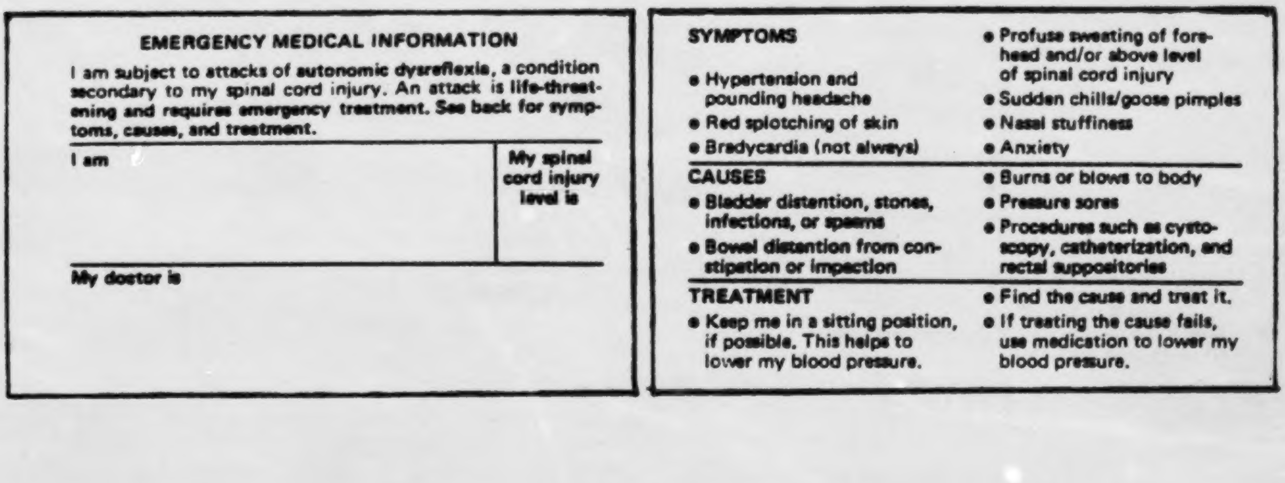
The previously conducted weekly Prosthetic/Orthotic Clinic held in the Physical Therapy Department exhibited some problems in its format. At times, the client received minimal staff and consultant contact during this clinic and left wondering what happened and what changes or plans were made. Again, several departments were closed for the duration of this clinic. The time investment of both staff and clients did not seem to be cost-effective.

This was changed with the hiring of WVRC's physiatrist and his appointment as Medical Director. He now holds Prosthetic/Orthotic Clinic monthly, in addition to seeing clients on a weekly as needed basis. This physician is more involved with the client, and the previously large entourage of staff need not be present. The orthopedist now works in an offiece in the Clinic when any orthopedic problems require his consultation. He does not see patients with non-orthopedic medical problems, such as those with pressure sores, ingrown toenails, spasticity, excessive sweating, etc., as he previously did.

The SCI Project nurse led pre-admission tours for families of potential clients and for clients who were scheduled to come to the Center. These tours appeared to be beneficial in that it prepared the client and his family for a rehabilitation program and helped to allay some of their fears and apprehensions. It eliminated some of their pre-conceived ideas or inaccurate information regarding the Center. She occasionally conducted tours for non-SCI clients at the request of field counselors, social workers, etc. It was interesting to note that of the approximately 20-25 clients and families given pre-admission tours, all but two of the clients completed their physical restoration programs here. Hopefully, this is an indication that these tours, along with the discussion of Center programs and purposes, better prepares the client to succeed in his program.

Upon the initial suggestion of the Project occupational therapist, the nurse helped the Project coordinator develop an "Emergency Medical Information" card regarding autonomic dysreflexia and took the responsibility for seeing that all SCI clients who were prone to this condition received a card. An example of this card is included.

Many physicians and emergency room personnel are unfamiliar with both spinal cord injury and autonomic dysreflexia. This card should be of assistance in these situations.



EMERGENCY MEDICAL INFORMATION

I am subject to attacks of autonomic dysreflexia, a condition secondary to my spinal cord injury. An attack is life-threatening and requires emergency treatment. See back for symptoms, causes, and treatment.

I am	**My spinal cord injury level is**

My doctor is

SYMPTOMS

- Hypertension and pounding headache
- Red splotching of skin
- Bradycardia (not always)
- Profuse sweating of forehead and/or above level of spinal cord injury
- Sudden chills/goose pimples
- Nasal stuffiness
- Anxiety

CAUSES

- Bladder distention, stones, infections, or spasms
- Bowel distention from constipation or impaction
- Burns or blows to body
- Pressure sores
- Procedures such as cystoscopy, catheterization, and rectal suppositories

TREATMENT

- Keep me in a sitting position, if possible. This helps to lower my blood pressure.
- Find the cause and treat it.
- If treating the cause fails, use medication to lower my blood pressure.

The SCI Project nurse served as the urological liaison nurse and was able to effect some changes in urological care. In the beginning, the urologist saw clinic patients in whatever little space was available. He had less than optimal contact with the Treatment Unit clients and reviewed their charts standing up at the Treatment Unit desk. Minimal information was provided to him on the consult sheet or on the doctors' progress sheets regarding what problems the client was having, present treatment, and why a consult was requested. The SCI Project nurse was able to obtain an examining room in the Clinic in which the urologist could examine and talk with clients. More detailed information was provided, orders were noted, and follow-up was carried out. The urologist, in turn, took more time with the clients, explained bladder management to clients who needed this type of physician reinforcement, and took more interest in the urological care of all referred clients. He indicated that this clinic was now much more organized, and it was pleasant for him to come to the Center. The SCI Project nurse also was trained to do CO_2 cystometry, and the x-ray technician was willing to learn this procedure, also. This procedure can now be done prior to the urologist's arrival at the Center and can then be interpreted by him.

The SCI Project nurse helped the Center lab technician draw blood on difficult clients when requested. She also assisted the x-ray technician in the administration of I.V.P. dye under physician orders and supervision until this routine was changed. Our patients are now sent to the radiologist's office for this procedure.

The SCI Project nurse agreed to serve as the infection control surveillance nurse for the Infection Control Committee set up by Dr. Mukkamala, WVRC Medical Director. She wrote the policies and procedures book using outside resources and input from the various departments involved. She constructed the case summary format and monthly report forms and compiles the data which is reported at the Infection Control Committee meetings.

The SCI Project nurse has effected improvements in the following systems:

a. Better communication between ADL nurse and social worker and the nursing staff at CAMC's SCI Unit via the Project nurse. Coordinated follow-up care at the SCI Clinic at CAMC/General Division with the ADL nurse for former CAMC/General Division patients.

b. Counselors have better access to medical information and condition of their clients via Project nurse; this includes both field and Center counselors.

c. Counselors, instructors, and others have gained more knowledge of spinal cord injury by attending client education classes.

d. Families have one person to identify with and communicate with to discuss care and medical follow-up via Project nurse.

e. Staffings have improved as a result of Project staff initiating client involvement.

f. Clients are better educated regarding effects of SCI and care involved by attending classes and one-to-one teaching done by Project nurse.

g. Nurse has established a good relationship with Treatment Unit staff, thereby helping staff and clients to resolve problems before they become crises.

h. Project nurse has set up a more organized urological clinic for SCI clients and acts as coordinator.

i. Established better communication with public health nurses and physical specialists.

j. Helped the Project coordinator set up a Staff/Client Communications Committee and worked with clients regarding resolution of such problems as broken shower chairs, cold water for showers in the dorm, getting put to bed too early, complaints regarding care on the Treatment Unit, etc. This committee was able to obtain a refrigerator and a study area in the men's dorm and get juice provided to those on bladder programs in the men and women's dorms. This committee served in an advisory capacity to the SCI Project, as well as representing all WVRC students enrolled in a physical restoration program.

k. Worked with the dietician and enlisted her help with regard to the importance of good diet and fluid intake for the SCI person. Mrs. Stout also taught several classes on nutrition at the request of the SCI nurse. Clients are better informed now regarding how important good nutrition is to their health.

l. Established personal contact with Dr. Nugent, Chief of Neurology, and Dr. Kandzari, Chief of Urology, at West Virginia University Hospital, gaining their support for referral services for our clients.

Problems/Recommendations

Problems with regard to patient care activites have significantly decreased since the SCI Project began. This decrease cannot be totally attributed to the SCI Project's efforts. The SCI Project was involved in improvement activities along with other staff members. Improvements have been constant and ongoing with several reasons for this. The acquisition of a physiatrist was a very positive factor in the improved medical care. Working for CARF accreditation was responsible for upgrading standards, and a sincere desire on the part of the Medical Services staff to improve care and services was noted. Better cooperation and communication between departments is now evident. As the clients become better educated, they tend to become more cooperative and interested in their programs; and the complaints they have are more pertinent to their health and rehabilitation program rather than just launching vendettas against staff or "picking" about insignificant things.

Some improvements are still needed from the SCI nurse's point of view. One major problem is in the area of recruitment of health care personnel. Salaries are much lower than the private sector, educational opportunities are minimal, and career mobility is limited. These factors will become increasingly critical in the area of nursing, as several of the present nursing staff are nearing retirement; and chances of obtaining educated, competent nurses for the future are poor.

A nursing shortage is being experienced nationwide, and other facilities are utilizing very innovative recruitment packages that include higher salaries, flexible working hours, educational opportunities, regular pay raises, and more opportunity for advancement, as well as superior insurance, retirement, sick leave, and vacation benefit packages. Shift differential and overtime pay are the norm in the private sector. Many health care facilities using nurses in an administrative capacity are paying them administrative salaries which are higher than nursing salaries. For example, a director of nurses position within the CAMC complex has a salary range of $26,000 to $44,000/yr. (1982) with five different levels of nursing positions under this one category, each with different salary ranges. Salaries are based on education, experience, and ability. On-going in-service education is provided along with opportunities for continuing education and pursual of degrees. Non-competitive salaries and benefits are not only present in the Center nursing department, but other areas as well, such as therapy. These problems have been discussed with the Center Administrator and the Agency's Deputy Directors in hopes some action will be taken in the near future to avert a lack of qualified care providers and thus low-quality patient care. This class problem applies to all state government agencies whose employees are governed by West Virginia Civil Service regulations.

It has been mentioned in other sections under "Problems and Recommendations" regarding the need for better utilization of the intermediate care units, separation of training students from therapy clients, more input regarding client progress from the nursing staff, continuing with client/family education programs, better teaching methods and evaluation of learning, and better documentation. These will not be repeated in this section.

With regard to team staffings in the Center's vocational training areas, it was shown that this method of staffing with client involvement was effective with the therapy clients and was recommended for the training areas. The SCI Project nurse offered to attend all staffings on SCI students in these areas and was willing to do consult work in the area of health education. In three years, she was asked to attend only three staffings on SCI clients and was asked to talk with only four clients. It is not known whether this was due to lack of knowledge regarding the SCI clients' health needs, lack of knowledge regarding the services the nurse could provide, lack of confidence in the SCI nurse's ability, or that the majority of the SCI clients had no health problems. This last explanation is disproven by reading the clients' medical charts in the Clinic. In spite of this, the nurse contacted all non-therapy SCI clients for education and follow-up. She called the training areas on a weekly basis to remind the clients of class and reported all problems and treatment to the counselors. SCI class attendance by their clients was not aggressively pursued by the training counselors, but it was not discouraged by them either. If a problem was reported, it was handled by the individual counselor, and team conferences were held only when a member of the SCI Project staff suggested it. It is recommended that better continuity of care and services be established when a client transfers from therapy to training. It is also recognized that the Clinic is understaffed and operating in a very small work area and is unable to do a great deal of teaching or training. The Clinic will be moving to much improved new quarters during 1982 which will enhance student health services. It is recommended that new admissions or readmissions to the dorm be assessed for possible further educational needs and referral to the proper staff for this education. This would mean the Treatment Unit staff would become more involved in the health education of dorm clients or the Clinic staff expanded to include a nurse-educator. It is recommended that training areas use the team approach based on that utilized with the therapy clients.

Urinary tract infections in clients with neurogenic bladders remains the most prevalent health problem noted. It is recommended that stringent cleaning methods be continued and education of the clients regarding bladder management be continued. Better documentation of the success or failure of bladder retraining programs needs to be done. The nursing staff needs to be able to make rapid input in regard to adjusting the catheterization schedules based on good nursing judgment regarding intake, voiding volumes, and residual volumes, and to teach the clients how to adjust their own schedules. Clients should be told the results of their lab reports and the treatment to be instituted. Regular urine specimens should be sent to the lab, such as monthly, on those clients prone to infection. It would be ideal if an R.N. on each shift could be responsible for urinary management on all clients with urinary problems, including the catheterizations. This is done in spinal injury centers, and a urological team takes care of all urinary procedures. In this setting, a team may not be feasible; and, under the present system, the R.N.'s do not do male catheterizations. If one person on each shift could be assigned on the men's and the women's wing of the Treatment Unit to do all catheterizations and urinary care, this may help reduce the infections that are caused by cross-contamination. That person could also be responsible for making sure drainage bags are emptied, cleaned, properly covered and kept off the floor, leg bags properly cared for, etc. They could also do teaching regarding self-catheterization and care of client equipment.

The nursing staff needs to be able to provide more input into such areas as eating in the cafeteria, sitting tolerance, feeding and dressing, transfers, etc. There is often a discrepancy between what therapy says a client can do and what they actually do on the Treatment Unit and vice versa. For example, the Treatment Unit staff note that clients feed themselves on the Unit; yet, until O. T. says they can feed themselves, they are provided trays on the Unit. The Treatment Unit staff may note that a client is doing self-care and transfers on the Unit and could go to the dorm, yet O. T. says they need more practice. A therapist may say a client needs to lie down and rest, and the Treatment Unit staff note that the client is difficult to get up or spends too much time in bed. All these instances need to be discussed between departments in order to maintain some consistency and program continuity.

Family conferences are still strongly recommended, but it has been noted that the number of conferences appears to have decreased rather than increased over the three year Project period. Family conferences need to be held for teaching purposes and discussion of progress and goals in addition to problem solving. This family involvement at critical stages in the rehabilitation program eliminates any surprises when the client is ready for discharge.

It is recommended that a urological liaison nurse continue to work with the consulting urologist due to the success of this arrangement.

It is recommended that the SCI apartment be turned over to the O. T. Department, along with the dispensation of juice in the dorms.

It is recommended that a person familiar with medical services take over pre-admission tours since this seemed to be beneficial to prospective clients and their families. These tours should be expanded to include non-SCI clients, also. Perhaps this could be arranged through the Volunteer Services section.

It is recommended that the in-service programs held on the Treatment Unit be continued. The Treatment Unit staff have been consistent in providing in-service programs and are to be commended. More group client education sessions could be instituted, especially after the evening meal. Such things as showing films or video-tapes on various topics might be a good utilization of some evening hours.

Better documentation of patient care and teaching activities still needs to be done. If third-party funding is to be obtained, charting practices will need to be more accurate and detailed for such agencies as Medicare. Procedures manuals, care plans, standing orders, and routine orders will need to be kept up to date and reviewed on a regular basis.

It is recommended that the files kept by the SCI nurse be retained in the clients' Center files following discharge. Much information on the problems, care, and teaching of the spinal cord injured can be found in these files.

A problem with lack of space in the Out-Patient Clinic has been noted for many years. Fortunately, this will be remedied in a few months with the completion of a new clinic area between Physical Therapy and the Treatment Unit. It is recommended that a urological exam room with a floor drain be incorporated in this area. It would also be an asset to have a classroom equipped with a blackboard, film screen, video-tape machine, and slide projector in which to hold client and staff education classes. The conference rooms now available are frequently reserved for staff meetings and, therefore, client education classes must be worked in around these meetings.

SCI NURSING INFORMATION SHEET

NAME ____________ LOCATION - T.U. ____ DORM ____ OTHER ____
ADDRESS ____________ RELATIVE/PERSON RESPONS. ____________
DATE OF BIRTH ________ AGE ____ ADDRESS ____________
DATE OF INJURY ________ ADM. DATE ________ PHONE NO. ________ COUNSELOR ________
CAUSE OF INJURY ____________ TRANSFERRED FROM ____________
TYPE & LEVEL OF INJURY ____________ SECONDARY DIAGNOSES ____________
____________ ____________
TREATED AT ____________ ALLERGIES ____________
SECONDARY INJURY ____________ ____________

SURGICAL PROCEDURES DURING HOSPITALIZATION	MEDICAL PROBLEMS DURING HOSPITALIZATION
ORTHO	
NEURO	
URO	
OTHER	

PRE-INJURY

PAST HISTORY ____________ MEDICAL FAMILY HISTORY ____________
EDUCATION ____________ WORK HISTORY ____________
SOCIAL HISTORY ____________ REHABILITATION PLAN ____________
____________ ____________

STATUS ON ADMISSION

EQUIPMENT ____________ DIET ________ FEEDS SELF ________
SKIN ____________ NEEDS HELP ________ UNABLE TO DO ________
BLADDER PROGRAM ____________ BOWEL PROGRAM ____________
ADL SKILLS ____________ MEDICATIONS & TREATMENTS ____________
____________ ____________
____________ ____________

IMMEDIATE NEEDS & GOALS ____________
____
____
____
____
____

DISCHARGE NOTE

LENGTH OF STAY - T.U. ______ DORM ______
TERMINATION DATE ________ REASON ________
____
FOLLOWUP ____________

CHAPTER 7

LENGTH OF STAY AND INTERCURRENT ILLNESS STUDIES

The following criteria were used to qualify individual clients for these studies. Once qualified for inclusion in the samples, the same samples were used for both the length of stay and the intercurrent illness studies.

1. The client had a spinal cord injury secondary to trauma.

2. Residency at the WVRC required Treatment Unit accommodations.

3. The client was admitted to the WVRC for a major program of physical/mental restoration.

4. The client completed his prescribed physical/mental restoration program.

5. The client had not been admitted to another rehabilitation facility prior to coming to the WVRC.

6. This was the first WVRC admission.

7. The total length of stay was computed on the number of days that a client physically resided on the Treatment Unit and their major program was one of physical/mental restoration.

8. Intercurrent illnesses were considered to be client health problems of sufficient magnitude to require medical treatment. Not all intercurrent illnesses added to the client's length of stay, but all were listed to illustrate the most frequently occurring health problems for this disability group.

9. It was not possible to calculate any increase in length of stay because of non-compliant behavior on the part of the client or because of periodic staff shortages at WVRC.

10. For purposes of conversion, a month was considered to have 30 days.

Length of stay and intercurrent illnesses - 7/1/76 to 7/1/79

Problems

As can be seen by the data, the length of stay on the Treatment Unit for the past three years was significantly reduced from the three years prior to the SCI Project. In going back through old files and reviewing the files which the SCI Project nurse kept, it quickly seemed apparent that factors other than intercurrent medical problems accounted for an increased length of stay. However, medical problems occurred much more frequently during the years between 7/1/76 and 7/1/79 than in the next three years. There were several possible reasons for this. Her record inspection was purposely hypercritical and these findings represent just one expert opinion. It was noted that more clients were admitted with pressure sores and were kept here for nursing care during that time. Some had skin surgery and were brought back to WVRC for post-operative nursing care during which time no therapy or limited therapy could be given. A number of clients developed sores after admission, and some clients developed sores repeatedly. Since the reasons were not documented or were unknown in some cases, the nurse could only speculate that the following were possible contributing factors: inadequate preventive education; client non-compliance; shortage of Treatment Unit staff (especially orderlies); and lack of teaching, follow-up, and leadership accountability from all played a role in the problems with skin sores. Counselor support and reinforcement regarding prevention of sores was rarely noted in the records. If they have not already done so, the entire staff of the WVRC needs to recognize their teaching responsibility for our clients - even if the teaching only involves providing an adequate role model. Most of the care and teaching was apparently left up to the Treatment Unit staff except in some cases where the therapists documented that teaching and care was done. With regard to admitting and keeping clients here with severe and recurrent sores for nursing care and post-operative care, the nurse felt that all must share in the responsibility since the Treatment Unit staff had no control over who was admitted and when they went home.

Urinary tract infections were present in every client whose file the nurse reviewed. Many had acute episodes that required hospitalizations. Urological follow-up appeared inadequate based on the information in the files. Many had positive urine cultures on admission and never had a follow-up culture unless they became ill, then they tended to receive treatment based on a culture done weeks or months before. Many were not treated for positive cultures and follow-up cultures were rarely done or at least were not documented. The consulting urologist was utilized, but his orders did not appear to be carried out with regard to intermittent catheterization programs, fluid intake, and voiding techniques. A few times, it was noted that the urologist ordered antibiotics and a repeat culture following treatment, but the culture was not done and the client was never referred back to the urologist for follow-up.

Intermittent catheterization programs did not appear to be started until two to four months after admission, and most clients were admitted with Foley catheters or suprapubic catheters. The only clients noted to have come to the Center on an intermittent catheterization program were from CAMC/General Division, and most of them ended up with a Foley put back in for various reasons including penile sores and edema, no reflex voiding, for convenience to travel home, acute urinary infections, and urinary retention. At times it was documented that the client was on an intermittent catheterization program when, in fact, the client was only catheterized for retention or residual urine.

Very few were on a regular catheterization schedule which is the basis of an intermittent catheterization program. A balanced bladder was not often achieved. Foley catheters, suprapubic catheters, high residual urine volumes, and infections seemed to be very common.

Bowel programs were instituted on admission, but inadequate documentation was noted regarding success or failure. It was noted that there were many problems with fecal impactions and loose stools, so it seems safe to assume that the bowel programs were unsuccessful in some cases. There was very little documentation regarding the client's dietary and fluid habits except in cases where alcohol was involved or the client refused to eat. Some bowel programs were on a two-day a week schedule; and, even though problems occurred, the records do not indicate that the schedule was increased. Any efforts made to improve the bowel programs were not documented.

Nurses' notes consisted chiefly of notations regarding dressing changes and treatment of sores, leaves of absence, chart review by the doctor, Foley catheter changes, residual urine volumes, and penile sores and edema. It was not apparent from the nurses' notes what daily living skills the client learned or whether he applied these skills to Treatment Unit living. Most teaching or its results were not documented. Behavior problems were noted at times; but the causes, effects, or outcomes were not noted. For example, it was occasionally documented that the client came to the Treatment Unit intoxicated or was verbally abusive to staff; but nothing was charted as to how these problems were resolved as far as the nurses' notes were concerned.

Doctor's progress notes were sporadic and it was not clear how often the doctor saw the client. If the doctor saw the clients on any regular basis, it was not documented. Several weeks and months elapsed before a progress note was written. Documentation did not show a re-evaluation of medications given for long periods of time. There was good follow-up with regard to obtaining SGOT's for those on Dantrium, and notations were made regarding spasticity. There were hospital discharge summaries noted if the client was admitted under the Center Medical Director's care at a local hospital, but very few were noted if the client was admitted under another doctor's care. These may have been placed in the client's central file or received after the client left the Treatment Unit. In some cases, the nurses' or progress notes did not indicate what a client was hospitalized for or how his condition was when he returned.

The records did not indicate discharge planning or follow-up. No evidence of referrals was noted for public health services nor was any regular notation made regarding discharge instructions.

Some delayed lab work sent to outside labs, x-rays, and reports were noted, resulting in delays in instituting needed treatment. Follow-up by physician care, either here or outside the Center, was not always documented in the records.

Family teaching was rarely documented, although the counselors set up family conferences as they saw the need. There was very little documentation regarding the nurse's contribution to the staffing of the client, and most of the documentation from other areas regarding the Treatment Unit's contributions centered on the attempts to resolve conflicts and disagreements among various departments. The client was not involved in his staffing and mostly appeared to be a passive recipient in his program except when he became angry and abusive and upset everyone. As the case manager, the counselor decided when family conferences were needed, what information or intervention was needed from the nursing and medical staff, when the client could leave the Center and for how long, vocational goals, etc. Very little input from the nursing staff was noted. Some reports by the physician were noted. Time constraints on our consultants limited physician participation in the medical staffings.

No formal client education classes were held and no notation of written material being given to the clients was seen. It was felt that teaching was done on the Treatment Unit as the client progressed through his program but was not adequately documented.

In summary, it was felt by the SCI Project nurse after going through the old files that much of what was done was not recorded. Thus, this narrative on the length of stay study from 7/1/76 to 7/1/79 seems very negative. There were positive things noted, but this writer had to "read between the lines" to ferret out these positive aspects. For example, many pressure sores were healed on the Treatment Unit because suddenly it was noted no further treatment was being administered. Also, the clients were sent to area hospitals when necessary, indicating the nursing staff was observant; however, the results of their care and observations were not adequately recorded. They needed to "blow their own horns," so to speak, regarding the good things they accomplished. Their patience regarding behavior problems was evident by the number of times they listened to verbal abuse, put intoxicated clients to bed, cleaned up after them, etc. However, they gave themselves very little credit for this and, apparently, neither did anyone else. They were expected to give quality care with an inadequate number of staff, and the total system seemed unable to support and assist them.

Other causes for increased length of stay and recommendations will be dealt with in the narrative on the length of stay study for the three year Project period.

Length of stay study for clients admitted between 7/1/76 and 7/1/79 (Pre-SCI Project)

Paraplegics - Males	Days
Client 1 - 3/29/77 to 6/24/77	85
Client 2 - 8/1/76 to 12/11/76	130
Client 3 - 1/16/76 to 10/14/76	268
Client 4 - 8/24/76 to 1/12/77	138
Client 5 - 3/18/76 to 12/17/76	269
Client 6 - 8/31/76 to 1/12/77 (T.U. to dorm - back & forth)	195 (Total days on T.U.)
Client 7 - 1/19/76 to 1/29/76	10
Client 8 - 9/7/76 to 3/11/77	184
Client 9 - 10/16/77 to 4/19/77	183
Client 10 - 4/8/77 to 2/24/78	316
Client 11 - 8/2/76 to 3/31/80 (Off & on T.U.)	395 (Total days on T.U.)
Total	2,173

Mean = 198 days or 6.6 months

Paraplegics - Females	Days
Client 1 - 11/7/77 to 5/19/78	198
Client 2 - 7/10/77 to 10/17/77	97
Client 3 - 8/1/77 to 11/16/78 (3 month leave of absence)	375
Client 4 - 2/5/79 to 8/31/79	206
Client 5 - 11/28/77 to 8/30/78	272
Total	1,142

Mean = 228 days or 7.6 months

Quadriplegics - Males		Days
Client 1 - 7/21/76 to 12/6/76		135
Client 2 - 10/31/77 to 7/27/79		626
Client 3 - 1/9/78 to 2/12/79		393
Client 4 - 3/23/76 to 11/23/76		240
Client 5 - 7/13/76 to 2/16/77		213
Client 6 - 5/17/76 to 3/4/77		287
Client 7 - 11/29/76 to 5/15/77		166
Client 8 - 9/10/78 to 2/16/79		156
Client 9 - 3/5/78 to 6/28/79		240
Client 10 - 2/1/77 to 8/21/78		560
Client 11 - 2/27/78 to 12/20/78		293
Client 12 - 2/15/76 to 8/24/77		549
Client 13 - 1/5/76 to 7/1/77		536
Client 14 - 5/8/77 to 11/16/78		548
Client 15 - 2/1/77 to 8/21/78		560
	Total	5,502

Mean = 367 days or 12 months

Quadriplegics - Females		Days
Client 1 - 8/3/77 to 1/19/79		526
Client 2 - 2/14/78 to 3/31/79		407
	Total	933

Mean = 467 days or 15.6 months

Intercurrent illnesses: Sample group is the length of stay study group admitted between 7/1/76 and 7/1/79 (Pre-SCI Project)

Due to inadequate documentation in most of the following cases, it was difficult to determine from the old records how much the intercurrent illnesses increased the length of stay. From the number and severity of medical problems documented, it is safe to say these problems very definitely increased the length of stay by weeks and months. Behavior problems, non-compliance, alcohol and drug problems, leaves of absence for other than medical reasons, and other causes of increased stays were not included in this listing of intercurrent illnesses.

Quadriplegics - Males

Client 1 - Chronic urinary tract infection. Foley catheter in for 4 months. Sore on right heel entire time. Sore, left leg from leg bag.

Length of stay: 4 mo. 15 days

Client 2 - Repeated urinary tract infections with acute episodes. Hospitalized 3 times for severe urinary tract infection. Sphincterolysis, 1979. Continued to have urinary tract infection. Right kidney damage. Decubiti both heels. Pressure areas - coccyx, both hips. Edema of penis - once. Epistaxis - twice. Upper respiratory infections - three times; hospitalized once for pneumonia. Fecal impactions; problems with bowel program. Poor diet; poor fluid intake.

Length of stay: 21 mo.

Client 3 - Decubitus, coccyx on admission. Orchitis. Frequent urinary tract infection with symptoms. Pressure area both ischii. Bruised area on back - scratch on right hip. Infected great toenails. Fecal impactions. Upper respiratory infections, pneumonia. Sphincterolysis, 1978. Car accident - cervical strain.

Length of stay: 13 mo. 7 days

Client 4 - Chronic urinary tract infection secondary to suprapubic catheter. Frequent catheter changes due to non-drainage. Broken area on coccyx 2 days after admission. Hospitalized twice for pneumonia (10 days) and pneumothorax (12 days). Abscess below suprapubic opening. Excessive sweating; went to bed frequently due to this. Broken areas, both heels. Hospitalized 10 days 9/76; no reason documented.

Length of stay: 8 mo.

Client 5 - Sacral decubitus on admission. Foley catheter on admission. Urinary tract infection on admission culture. Intermittent catheterization program started 3 days after admission. Discontinued when symptomatic urinary tract infection developed 3 days later. No documentation of it ever being resumed. External collecting device use was noted at a later date. Three urine cultures done; treated twice for urinary tract infection. Treated for gonococcus. Skin breakdown, both heels. Edema of penis, twice. Skin graft to coccyx 4 mo. after admission; 3 mo. to heal, down 2 mo. Broken area, right hip - grounded. Broken area, left hip - grounded. Broken area on penis.

Length of stay: 7 mo. 7 days

Client 6 - Broken area, right heel on admission; treated for 5 mo. Chronic urinary tract infection. Foley catheter on admission. Intermittent catheterization program was started 2 mo. later. Broken area, right rib area and left lower abdomen; no cause documented. Broken area on penis from external collecting device. Edema of penis from leaving the same external collecting device on for several days (client). Broken area on coccyx 8 mo. after admission. Broken area on buttocks 8 mo. after admission.

Length of stay: 9 mo. 13 days

Client 7 - Post-operative flap rotation of buttocks on admission. Open, drainage sinus tract with infection in suture line. Treated entire stay. Right hilar mass; no final diagnosis documented. Urinary tract infection - one culture done; no follow-up recorded. Ingrown, infected toenails.

Length of stay: 5 mo. 14 days

Client 8 - Urinary tract infection; 2 cultures done. Treated twice for acute urinary tract infection. Edema and irritation of penis from external collecting device. Broken area, right hip. Infection, right great toe.

Length of stay: 5 mo. 6 days

Client 9 - Urinary tract infections, 6 times, documented by cultures. Peri articular ossification by x-ray; no symptoms documented. Infected toenail. Edema and irritation of penis from external collecting device. Deep vein thrombosis, left leg; grounded 2 weeks. Bowel problems; impactions, loose stools, poor results from suppositories. Injury to right leg. Upper respiratory infection. Broken area, left heel. Suprapubic cystostomy; 7 days hospitalization.

Length of stay: 1 yr. 3 mo. 16 days
(8 mo. on T.U.)

Client 10 - Frequent urinary tract infections. Foley catheter. No treatment recorded for positive urine cultures. Frequent catheter changes. Intermittent catheterization program tried briefly; had no reflex voiding, so Foley was reinserted. Deep vein thrombosis, left leg, 2 days after admission. Recurrent swelling for several months. On Coumadin several weeks. Pressure area, coccyx; limited up time for several weeks. Burn, left little finger; no cause documented. Autonomic dysreflexia several times due to non-draining catheter. Broken area, left heel; treated several months.

Length of stay: 18 mo. 15 days

Client 11 - Repeated episodes of urinary tract infection. Treated 6 times; once with I.V.'s and I.V. antibiotics. Autonomic dysreflexia. Cathed as necessary. Intermittent catheterization program ordered 2 mo. after admission. Only cathed when unable to void with no regular catheterization program. Sores on right hip, ankles, and legs on admission. Skin surgery prior to admission with drainage from donor site. Broken area; coccyx. Sphincterolysis; hospitalized 7 days. Seizure; hospitalized 4 days. No diagnosis documented. Penile edema from external collecting device. In bed frequently for sweating, gastrointestinal distress, headaches, fever, etc.

Length of stay: 10 mo.

Client 12 - Frequent urinary tract infections. Foley catheter. Suprapubic cystostomy in June 1977. Decubiti; left ischium and coccyx; 7 mo. to heal. Blisters on leg twice from leg bag.

Length of stay: 18 mo. 7 days

Client 13 - Frequent urinary tract infections. Suprapubic catheter on admission. Autonomic dysreflexia from plugged catheter and fecal impactions. Upper respiratory infection. Sores, both heels. Frequent fecal impactions.

Length of stay: 18 mo.

Client 14 - Frequent urinary tract infections. Foley catheter with frequent changes due to non-drainage. No record of intermittent catheterization being started. Edema, left lower leg. Sores, both elbows. Cigarette burn, right hip. Burned fingers; no cause documented. Upper respiratory infection. Ingrown, infected toenail.

Length of stay: 18 mo.

Client 15 - Urinary tract infections, treated 4 times. No follow-up cultures documented.

Length of stay: 18 mo. 15 days

Quadriplegics - Females

Client 1 - Secondary diagnosis; congenital blindness. Chronic urinary tract infection. Foley catheter. Frequent catheter changes due to non-drainage. Vaginitis. Broken areas on ankles and heels on admission. Right heel got worse. Pediculosis. Pressure area on coccyx. Tenotomy, left wrist. Blisters, right thigh; no cause documented. Upper respiratory infection, twice. Gastroenteritis. Rash and itching, 6 days; possible allergy to Ampicillin. Burn on chest; spilled hot tea. Abrasion, left elbow.

Length of stay: 17 mo.

Client 2 - Pressure sore; coccyx on admission. Treated entire stay. Grounded for 2 mo. after admission. Went home for visit; sore got worse and was grounded 1 more month. Sores on both heels. Grounded 3 weeks for worsening of sacral sore. Urinary tract infection; 2 cultures done. No follow-up or treatment documented for positive cultures. Foley catheter used for drainage. No intermittent catheterization program recorded. Blister, left thigh. Upper respiratory infection with congestion. Red areas, both ischii; treated several days.

Length of stay: 13 mo. 14 days

Paraplegics - Male

Client 1 - Secondary disability; brain damage from post lobectomy. Caused problems with progress in therapy. Completed therapy, but did not follow through. Urinary tract infection, twice. Refused to cooperate with bowel and bladder programs.

Length of stay: 3 mo.

Client 2 - Chronic urinary tract infection. Foley catheter inserted for retention. No record of intermittent catheterization program started. Client refused to have Foley removed. Frequent catheter changes due to non-drainage.

Length of stay: 4 mo. 10 days

Client 3 - Chronic urinary tract infection. Suprapubic catheter on admission; removed 3 mo. after admission. No record of intermittent catheterization program. Cathed as necessary for residual/retention. Pressure sores; sacrum, right ischium, left knee and ankle. Arthritis of knees. Excision of ischial decubitus. Post-operative care here; down 1 month. Treatment to incision until terminated. Bowel problems, probably secondary to poor diet, alcoholism, cirrhosis.

Length of stay: 9 mo.

Client 4 - Frequent urinary tract infections. Pyleonephritis once. Acute urinary tract infections twice; required I.V.'s once. Not fully cooperative with intermittent catheterization program. No documentation of any disciplinary action taken. Treatment to broken areas, but no location documented.

Length of stay: 4 mo. 12 days

Client 5 - Secondary disability; left brachial plexus injury with loss of function in left arm. Frequent urinary tract infection. Suprapubic catheter on admission. Suprapubic changed frequently due to non-drainage. Decubitus, left heel on admission. Developed a decubitus on one ischium; which side not documented. Infection, one great toe. Blister, right hip. Red area, right hip, 3 times. Left leg and ankle edema. Large broken area; left heel, following being home for holidays.

Length of stay: 9 mo.

Client 6 - Frequent urinary tract infections. Intermittent catheterization started in hospital and continued here on admission. Foley catheter inserted at later date; reason not documented. Pneumonia; hospital for 7 days. Edema of penis from external collecting device. Blisters, left leg, from leg bag. Red area, left hip, twice. Pressure sore, left hip. Upper respiratory infection. Gastrointestinal distress.

Length of stay: 6 mo. 15 days

Client 7 - Abrasion, left inner lower leg.

Length of stay: 10 days

Client 8 - Urinary tract infection. Foley catheter on admission. Intermittent catheterization program started 1 month after admission. Burn, top of right foot from sitting too close to fireplace at home. Abrasion, gluteal region; no cause documented.

Length of stay: 6 mo.

Client 9 - Frequent urinary tract infections. Foley on admission. Intermittent catheterization program started 4 mo. after admission. Surgery done; post-operative care here. Down 2 mo. Broken area on back. Sore on right knee, right heel. Peripheral neuritis.

Length of stay: 6 mo.

Client 10 - Pressure sores; right lower leg, right ankle, top of left foot on admission. Treated for 6 mo. Chronic urinary tract infection; occasional treatment noted. Pressure sore, left ischium. Broken area on penis - twice. Broken areas, both hips; grounded 1 mo.

Length of stay: 10 mo. 15 days

Client 11 - Decubitus, right ischium and coccyx. Eventual skin graft; post-op here. Sore, right hip, following healing of surgical area. Repeat sores on coccyx, twice. Ulcerated area on one thigh.

Length of stay: 13 mo.

Paraplegics - Females

Client 1 - Urinary tract infection; 2 cultures; no follow-up documented; treated once. Foley catheter on admission. Began self-catheterization 3 months after admission. Trach tube in on admission. Trach care for 2 months. Pulmonary congestion. Sore on left calf from burn; no cause documented. Abrasions, both knees, fell out of wheelchair.

Length of stay: 6 mo. 12 days

Client 2 - Foley on admission. Intermittent catheterization program started 2 mo. after admission. Urinary tract infection - admission culture. No follow-up cultures or treatment were recorded. Suture line from Harrington-Rod surgery infected.

Length of stay: 3 mo. 7 days

Client 3 - Urinary tract infection, 2 cultures - no follow-up recorded. Foley catheter on admission. Intermittent catheterization program started 2 months after admission. Discontinued and Foley reinserted; reason not documented. Bladder stone. Obesity; limited self-care. No attempt made by client to lose weight. Pressure sore on coccyx; limited up time. Sore, right ankle.

Length of stay: 12 mo. 14 days

Client 4 - Broken area on coccyx on admission. Skin flap done 4 mo. after admission. Down 1 month. Urinary tract infection - Foley catheter on admission. Removed 4 weeks after admission and intermittent catheterization taught. Swollen labia resulted in Foley reinserted for another month and a half. Self-catheterization resumed. Bladder stone.

Length of stay: 7 mo.

Client 5 - Chronic urinary tract infection. Ileo for several years. Impactions. Liquid stools frequently. Pressure sore on coccyx on admission. Treated and healed after several months. Injury with infection to both hands; no cause documented. Recurrent sacral sore. Cellulitis, left forearm.

Length of stay: 9 mo.

Length of stay and intercurrent illnesses - 7/1/79 to 7/1/82

The SCI nurse was unable to come up with accurate comparative figures regarding the increased length of stay because of intercurrent illnesses due to inadequate documentation in the old files. However, she felt comparing the lists of intercurrent illnesses on the two study groups, along with the obvious decrease in the length of stay in the last three years, justifies her statement that intercurrent illnesses decreased during the SCI Project years and did not last as long when they did occur.

As can be seen in the listing of illnesses, urological complications remain the biggest health problem for the SCI person. However, during the last three years, it was noted that only one client in the sample group was admited with a suprapubic catheter which remained in during his stay at the Center, and only one of the sample group left the Center with a Foley catheter. The client with the suprapubic catheter had an outside urologist who refused to allow us to put the client on an intermittent catheterization program, and the client who had a Foley catheter left in had used this form of drainage for 20 years and did not wish to change. All other clients in the study group were started on an intermittent catheterization program soon after admission, especially after the physiatrist came to this Center. Better follow-up was maintained due to the diligence of the physiatrist and the SCI Project nurse with cooperation from the Treatment Unit staff. The SCI Project nurse worked closely with the consulting urologist on all SCI clients. She did individual and group teaching regarding bladder management, made referrals to the urologist, checked on follow-up, and checked to make sure periodic residual urines and cultures were done. She screened the referrals to the urologist regarding which clients needed to be examined, which ones needed explanations and reinforcement regarding bladder management, those who required post-operative visits, and those clients who just needed a chart review and orders written. She also checked the referral sheets for adequate information, necessity of the consult, and completeness. This brought about better utilization of the urologist's time and better care for the clients. The Treatment Unit staff and clinic staff helped and supported her in these efforts.

Positive cultures were treated more quickly, and adequate follow-up was obtained. Better care of equipment was instituted, and the clients were taught sterile technique, clean technique, care of equipment, signs and symptoms of infection and stones, fluid regulation, and the consequences of poor bladder management. They were able to have more input and active participation in their bladder programs because they were taught and expected to do so. If they did not comply, this was brought up at staffing and brought to the counselor's attention as many times as was necessary. The physiatrist supported the nursing staff in these efforts and helped with the teaching, also. He emphasized to the clients that he would not be responsible for their medical care if they did not comply. The urologist would not treat anyone with a Foley catheter in as their choice of drainage, thus making it imperative that bladder re-training programs were stressed and carried out. All of these efforts also decreased the incidence of renal calculi.

Pressure sores decreased during the three years of the SCI Project; and, again, teaching and staff support made the difference. The SCI Project nurse also talked with field counselors and the Assistant Administrator of Medical Services regarding not sending or admitting to the Center any client with large open sores. It was stressed by the SCI nurse that the sores be dealt with prior to Center admission, since these sores interfered with their whole program and required many hours of nursing care that could be done outside a rehabilitation setting. The number of clients admitted and kept with large sores gradually decreased. Once here, the clients were educated on prevention and were made to understand that prevention of sores was their responsibility. The clients in the study group who were admitted with sores that did not interfere with their program were treated successfully with the exception of one. This one client was kept here and grounded off and on for six months due to a non-healing sore, eventual surgery, and poor post-op healing. The sores that got worse while clients were on the Treatment Unit were noted in many cases to have become worse while the client was home. This may have been due to inattentiveness to prevention on the part of the client, family ignorance and non-support, lack of client understanding and education, or willful self-neglect and carelessness. It was noted that some clients developed sores after moving to the dorm and out from under the watchful eyes of the nursing staff, indicating client irresponsibility.

There was a decline in the incidence of leg sores from leg bag straps due to more careful application. At the time the SCI Project ended, there were no SCI clients on the Treatment Unit with a pressure sore.

There was only one client who developed deep vein thrombosis while on the Treatment Unit, and he had had problems with this in the hospital. Two clients in the study group had post-op complications from a urinary sphincterolysis, and one client was hospitalized for a subarachnoid hemorrhage.

Upper respiratory infections and pneumonia affected some quadriplegics, causing one in the study group to be hospitalized and five others to be confined to bed for a few days. Four of those were heavy smokers.

Gastrointestinal distress and bleeding were causes of two hospitalizations, and other incidences of gastrointestinal distress were chiefly alcohol or diet related.

Bowel programs were instituted on a three day a week basis on all SCI clients. Some were reduced to two days, but there was little evidence that two day a week programs were effective. Three days a week did not appear adequate for some clients. All clients were encouraged by the SCI nurse to develop an individual program when they left the Center. The Treatment Unit staff have extreme difficulty in finding ways to individualize bowel programs due to the volume of bowel programs, scheduling, and problems with staffing patterns. The SCI Project nurse was able to do individual teaching and group teaching and enlisted the frequent help of the dietician for teaching about diet with regard to bowel and bladder management. It was noted that during the last year or two of the SCI Project there were fewer incidences of fecal impactions charted on the nurses' notes, and many bowel problems were diet and alcohol related or from client's lack of adherence to the schedule.

Excessive sweating and spasticity were evident in many clients, but this was not allowed to be used as an excuse to miss therapy in most cases. Medication was given only when these problems interfered with the client's program or self-care activities.

These were the major medical problems that added extra days to some clients' lengths of stay. However, it was noted by the nurse that there were many other reasons for an increased length of stay. These are listed below, and the reader is reminded that these are the SCI nurse's opinions only; and other staff members may and probably will disagree with some of these. These opinions are based on three years of observing, listening in staffings, talking with clients and families, and discussions with other staff. Some of the causes were unavoidable while others were not, in this writer's opinion.

1. Awaiting equipment, such as wheelchairs, splints, braces.
2. Receiving defective or inadequate equipment requiring that it be sent back for repair, modification, or replacement.
3. No living arrangements or provision for post-discharge care prior to the client's admission or plans changing once the client was here.
4. Client non-compliance with his program.
5. Low intellectual level.
6. Psychiatric problems.
7. Psychological and adjustment problems.
8. Self-neglect.
9. Alcohol or drug abuse.
10. Family problems.
11. Secondary illness or injury.
12. Heavy cigarette smoking, especially in quadriplegics.
13. Doctor's appointments.
14. Temporary program interruption for "personal reasons."
15. Temporary program interruption for disciplinary reasons.
16. Training students kept on the Treatment Unit for attendant care only and then developing problems, including former clients readmitted for training.
17. "Perfecting" certain techniques or skills such as writing, typing, transferring, walking, etc., which in some cases might have been "fine tuned" at home.

18. Delays in receiving lab reports, x-ray reports, consultations, and consult reports. (X-rays are being taken much faster since a full-time x-ray technician was hired, and x-ray reports are now received quicker with a radiologist added to the consulting staff.)

19. Waiting for a client to return to the Center after an excused or unexcused leave of absence. If the client must be transported home by Center vehicle during holidays when the Center is closed, this may add as much as two weeks to the length of stay because of the logistics in providing transportation.

20. Interrupted course of treatment; client leaving the Center and returning later, not picking up medication, absent from the Treatment Unit at medication time, repeat lab work delays, etc.

21. It was noted that some clients had pre-injury personality traits which contributed to the length of stay. Individuals with sociopathic traits achieved some degree of success in manipulating the staff. Manipulation was manifested in many forms: non-compliant behavior with the skillful use of a variety of excuses; some attempted to use adjustment problems to the disability as rationale for unacceptable behavior while refusing to avail themselves of the professional help available to deal with these issues; and blaming others - Center staff, family members, etc., - for the failure to perform and achieve agreed upon goals.

22. No specific discharge date set on admission for client and staff to work toward. Discharge time is currently estimated in terms of weeks or months.

23. The current team approach needs a good deal of maintenance effort for it to function at its maximum potential. With the present team approach, the counselor makes the final decisions with team members acting more like reporters of information only. There is little input from the nursing staff which impacts on the client's total program. Ultimatums are sometimes given regarding behavior problems by staff, then not carried through. Defensiveness is noted at times in some team members. The client is sometimes "talked at or around" in staffing rather than including the client as part of the team. Some team members are reluctant to discuss negative aspects of the client's performance along with the positive, especially in regard to behavior problems. The counselors sometimes prefer to deal with behavior problems privately with their clients instead of making this a problem for the team to resolve.

24. Emphasis is on physical restoration during the extended evaluation program. Other factors were not given as much significance as long as client was doing well in therapy.

25. Inadequate level of family involvement and/or support in educational aspects, rehabilitation, behavior problems, vocational plans, etc.

26. Lack of staff, at times, in some areas.

27. Under utilization of staff in some areas.

28. Waiting to be scheduled in the Vocational Evaluation program.

Length of stay study for clients admitted between 7/1/79 to 7/1/82

Paraplegics - Males		Days
Client 1 - 4/13/80 to 4/24/80		11
Client 2 - 9/27/81 to 11/17/81		50
Client 3 - 8/24/80 to 10/1/80		37
Client 4 - 4/20/81 to 6/3/81		43
Client 5 - 7/9/79 to 9/18/79		69
Client 6 - 9/7/81 to 9/24/81		17
Client 7 - 11/10/81 to 2/3/82		83
Client 8 - 8/9/81 to 10/20/81		71
Client 9 - 9/3/79 to 10/1/79		28
Client 10 - 5/10/81 to 7/22/81		72
Client 11 - 9/14/80 to 3/2/81		168
Client 12 - 2/16/81 to 5/18/81		92
Client 13 - 5/25/81 to 9/25/81		120
Client 14 - 1/13/80 to 2/6/80		23
Client 15 - 2/21/82 to 4/26/82		65
	Total	949

Mean = 63 days or 2 months

Paraplegics - Females

Client 1 - 5/18/81 to 9/30/81		132
Client 2 - 11/1/81 to 1/9/82		68
Client 3 - 8/19/79 to 8/27/79		8
Client 4 - 2/19/82 to 5/31/82		102
Client 5 - 2/16/81 to 5/8/81		82
	Total	392

Mean = 78 days or 2.6 months

Quadriplegics - Males	Days
Client 1 - 10/22/81 to 4/30/82	188
Client 2 - 9/20/81 to 1/27/82	127
Client 3 - 9/8/80 to 4/10/81	212
Client 4 - 3/15/81 to 11/17/81	242
Client 5 - 1/20/81 to 7/31/81	191
Client 6 - 4/7/80 to 12/12/80	245
Client 7 - 1/21/80 to 3/5/80	44
Client 8 - 5/25/80 to 7/14/80	49
Client 9 - 1/6/80 to 5/16/80	130
Client 10 - 7/17/79 to 7/7/81 (less 2 mo. LOA)	650
Client 11 - 10/15/80 to 5/8/81	203
Client 12 - 5/17/81 to 11/19/81	192
Client 13 - 1/29/80 to 10/10/80	251
Client 14 - 10/25/81 to 4/7/82	162
Client 15 - 7/16/79 to 4/11/80	265
Total	3,151

Mean = 120 days or 7 months

Quadriplegics - Females	
Client 1 - 5/31/80 to 9/12/80	101
Client 2 - 3/22/81 to 7/31/81	129
Client 3 - 2/9/81 to 6/12/81	123
Total	353

Mean = 118 days or 4 months

Intercurrent illnesses: Sample group is SCI Project length of stay study group admitted between 7/1/79 to 7/1/82

Quadriplegics - Males

Client 1 - Chronic urinary tract infection. Suprapubic catheter. Bladder stones; surgical removal. Excessive sweating. Pressure sore on one heel; sustained on a home visit. Deep vein thrombosis, left leg; hospitalized 8 days. Outside doctor visits 5 times.

Length of stay: 6 mo. - Increased length of stay: approx. 10 days

Client 2 - Urinary tract infections, twice. Staph infection in bone graft site on admission. Staph infection, right eye. One week off for personal leave--not illness.

Length of stay: 4 mo. - Increased length of stay: approx. 2 days for illness

Client 3 - Spinal shock on admission. Dysreflexia; unsuccessful trial on intermittent catheterization, three times. Urinary tract infections, 3 times. Leave of absence, 4 weeks, for urological surgery and vacation (holiday).

Length of stay: 7 mo. - Increased length of stay: approx. 21 days

Client 4 - Cervical instability on admission; hospitalized 3 weeks. Urinary tract infections, 3 times. Obesity. Sacral sore, twice. Bowel problems. Three weeks personal leave--not illness.

Length of stay: 8 mo. - Increased length of stay: approx. 28 days for illness

Client 5 - Pressure sore; thigh, 2 weeks. Three weeks personal leave. Three days hospitalization for urological surgery. Two days for post-surgical complications. Urinary tract infections, 5 times.

Length of stay: 6 mo. - Increased length of stay: approx. 7 days for illness

Client 6 - Secondary disability; blindness. Urinary tract infection, twice. Autonomic dysreflexia. Subarachnoid hemorrhage; hospitalized 20 days. Sacral sore on admission. Removal of trach tube; 1 week off.

Length of stay: 8 mo. - Increased length of stay: approx. 28 days

Client 7 - Urinary tract infections, 3 times. Autonomic dysreflexia. Gastrointestinal distress and possible bleeding; hospitalized 5 days. Sacral sore and both tuberosities (after moving to dorm); down 3 days. Upper respiratory infection; 2 days. Doctor visits, 3 times.

Length of stay: 1 mo. 15 days - Increased length of stay: approx. 21 days

Client 8 - Gastrointestinal bleeding; 1 week. Urinary tract infection, twice. Gastrointestinal distress secondary to drinking, twice; 6 days.

Length of stay: 1 mo. 15 days - Increased length of stay: approx. 14 days

Client 9 - Sacral sore on admission. Upper respiratory infection; down 2 days. Lobar pneumonia; hospitalized 5 days. Bronchoscopy; hospitalized 3 days. Urinary tract infection, twice.

Length of stay: 4 mo. 15 days - Increased length of stay: approx. 10 days

Client 10 - Urinary tract infeciton, 6 times. Sacral sore; surround dermatitis; grounded total of 6 months. Skin surgery; hospitalized 3 weeks. Paraphimosis; down 5 days. Urological surgery; hospitalized 4 days. Post-surgical complications; hospitalized 4 days.

Length of stay: 22 mo. - Increased length of stay: approx. 6 mo. 23 days

Client 11 - Urinary tract infection, 4 times. Doctor visits, 4 times. Upper respiratory infections, 3 times. Admitted with sacral pressure sore; got worse; down 1 hour twice a day for 2 weeks.

Length of stay: 7 mo. - Increased length of stay: approx. 10 days

Client 12 - Urinary tract infections, 6 times. Upper respiratory infections, twice (5 days and 10 days). Pressure sore on ischii (sustained at home); down 3 weeks. Sore on coccyx (home visit); down 10 days. Infected toenails. Urological surgery; hospitalized 4 days. Doctor visits, twice.

Length of stay: 6 mo. 15 days - Increased length of stay: approx. 1 mo. 19 days

Client 13 - Admitted with sores on both heels and calves. Sacral sore after admission; got worse at home, twice; grounded, 3 times for total of 3 weeks. Upper respiratory infection, 5 times. Doctor visits, 1. Painful winging of scapula, 2 weeks.

Length of stay: 8 mo. - Increased length of stay: approx. 28 days

Client 14 - Autonomic dysreflexia; down off and on for 3 weeks. Pressure sores, ischii; down 8 days. Upper respiratory infections, twice; down 3 days. Gastrointestinal distress (alcohol related); 2 days. Poor diet with malnutrition. Dizziness; down an intervals. 1 week. Urinary tract infections, 3 times.

Length of stay: 5 mo. 15 days - Increased length of stay: approx. 28 days

Client 15 - Urinary tract infections, 6 times; down 3 days; hospitalized 2 weeks. Sacral sores, down 2 weeks. Left ischial sore, twice; down 2 weeks and 1 week. Burn (home) right scapula. Penile sores, 3 times; 1 week. Orchitis; 2 days down. Sphincterotomy; hospitalized 3 days. Bladder stones. Winging of the scapula.

Length of stay: 9 mo. - Increased length of stay: approx. 2 mo. 3 days

Quadriplegics - Females

Client 1 - No intercurrent illnesses.

Length of stay: 3 mo. 15 days - Increased length of stay: 0

Client 2 - Urinary tract infections, chronic (ileo - prior to SCI). Stones. Sacral sore (on admission). Gastrointestinal bleeding; hospitalized, 1 week. Frequent gastrointestinal distress. Frequent headaches. Weakness. Dizziness. Multiple pre-injury medical and psychiatric problems.

Length of stay: 4 mo. - Increased length of stay: approx. 21 days

Client 3 - Chronic urinary tract infections (Foley). Sacral sore on admission.

Length of stay: 4 mo. - Increased length of stay: 0

Average increased length of stay for quadriplegics due to illness = 30 days

Paraplegics - Males

Client 1 - Urinary tract infections, once. Diarrhea 3 days after going to dorm. Epididymitis, 1 week.

Length of stay: 11 days - Increased length of stay on T.U.: 0 - Increased length of stay (not on T.U.): 10 days

Client 2 - None

Length of stay: 1 mo. 20 days - Increased length of stay: 0

Client 3 - None

Length of stay: 1 mo. 7 days - Increased length of stay: 0

Client 4 - Urinary tract infections, twice. Penile sore. (Upper respiratory infection, 10 days, dorm - abrasion on back.)

Length of stay: 1 mo. 13 days - Increased length of stay: 0 (on T.U.)

Client 5 - None

Length of stay: 2 mo. 9 days - Increased length of stay: 0

Client 6 - Urinary tract infections, 3 times. Sore, left heel on admission. Doctor visits, twice. Sore, left hip (dorm).

Length of stay: 17 days - Increased length of stay: 1 day on T.U.

Client 7 - Urinary tract infections, once. Sacral sore on admission.

Length of stay: 2 mo. 23 days - Increased length of stay: 0

Client 8 - Urinary tract infections, twice. Post-surgical skin wound on admission; 3 days. Pain, 2 weeks.

Length of stay: 2 mo. 11 days - Increased length of stay: 7 days

Client 9 - Urinary tract infection, once. Post-injury abdominal pain.

Length of stay: 28 days - Increased length of stay: 0 on T. U.

Client 10 - Urinary tract infections, once. Hospitalized 5 days for cast removal and bracing.

Length of stay: 2 mo. 12 days - Increased length of stay: 5 days

Client 11 - Urinary tract infections, twice. Sacral sore (brace rubbed), twice; down 7 days and 3 days. Doctor visits, 4 times. Lower extremity edema; down 1 day.

Length of stay: 5 mo. 18 days - Increased length of stay: approx. 12 days

Client 12 - Urinary tract infections, twice. Sores both feet (home); sore, left ischium; down 2 days. Doctor visit, 1.

Length of stay: 3 mo. 2 days - Increased length of stay: 3 days

Client 13 - Upper respiratory infections, two. Doctor visits, 2.

Length of stay: 4 mo. - Increased length of stay: 2 days

Client 14 - Urinary tract infection, 1. Sore, right ischium; dorm 2 days down. Burn, right thigh. Doctor visit, 1

Length of stay: 23 days - Increased length of stay: 0 days on T. U.

Client 15 - Urinary tract infections, two. Sore, right gluteal fold; stayed in dorm.

Length of stay: 2 mo. 5 days - Increased length of stay: 0 days on T. U.

Paraplegics - Females

Client 1 - Urinary tract infection, 1. Doctor visits, 2. Upper respiratory infection, 2 days. Personal leave 1 week - not illness.

Length of stay: 4 mo. 12 days - Increased length of stay: approx. 4 days

Client 2 - Urinary tract infections, 2

Length of stay: 2 mo. 8 days - Increased length of stay: 0

Client 3 - None

Length of stay: 8 days - Increased length of stay: 0

Client 19 - Urinary tract infections, 1

Length of stay: 3 mo. 12 days - Increased length of stay: 0

Client 4 - Psychiatric problem - secondary diagnosis on admission.

Length of stay: 2 mo. 22 days - Increased length of stay: approx. 1 mo.
(not an intercurrent illness; was already present on admission)

Average increased length of stay for paraplegics due to illness = 1.75 days

LENGTH OF STAY RESULTS

Pre-SCI Project 7/1/76 to 7/1/79		SCI Project 7/1/79 to 7/1/82	
Male Paraplegics:	198 days or 6.6 months	Male Paraplegics:	63 days or 2 months
N = 11		N = 15	
Female Paraplegics:	228 days or 7.6 months	Female Paraplegics:	78 days or 2.6 months
N = 5		N = 5	
Male Quadriplegics:	367 days or 12 months	Male Quadriplegics	210 days or 7 months
N = 15		N = 15	
Female Quadriplegics:	467 days or 15.6 months	Female Quadriplegics:	118 days or 4 months
N = 2		N = 3	

The improved lengths-of-stay are self-evident.

Recommendations

Although the SCI Project nurse does not claim to be an expert in all areas of rehabilitation, she does have some recommendations with regard to some of her observations, realizing that many of these recommendations may not be feasible or practical from someone else's point of view.

With regard to waiting months for equipment and then receiving inadequate equipment, it is understood that with equipment going out on state bid the process is very slow. However, it would appear that at times paying more for better equipment would be worthwhile in terms of time and money spent on maintenance, repair, and exchange of equipment. Also, there has to be a better system for returning wheelchairs and other equipment from the field to the Center than just waiting for someone to come this way. Much time also appears to be lost in waiting for someone to come to the Center to pick up equipment. This has been a chronic problem and continues to be one in spite of efforts to improve the system.

It is impossible to be assured in every case that the client will have a place to live when he leaves the Center. Discharge planning is complicated when the client's living arrangements are less than ideal, i.e., discharged to nursing home, lack of accessible housing, lack of someone willing or able to care for the client, etc. Only one SCI Project client was discharged directly to a nursing home. This occurred when his support systems collapsed as a result of divorce and no other family member being willing or able to assume his attendant care needs. Some clients may desire to go back to less than ideal life styles because that is all they have ever known. Many, of course, want much better living arrangements. Discharge plans should be made in advance of termination, with the client making those plans and the staff helping him. The counselors work hard for a resolution in these cases with what appears to be, at times, limited resources.

Let the reader understand that this writer is not trying to be overly critical. The staff involved did what they thought best. These are some questions that came up during the SCI Project that perhaps need to be answered for the future.

One of the most frequently occurring problems seen that increased the length of stay was in the area of behavior: this included psychiatric/psychological problems, non-compliance, alcohol/drug abuse, self-neglect, lack of motivation, low intellectual levels, and pre-injury behavior patterns. Much could be written dealing with all the ramifications of this area, but it was noted that giving authority to counselors to deal with each of their clients individually did not always seem to produce the most consistent or desirable outcomes. Each counselor had his or her own philosophy regarding management of behavior problems, and no consistent method was followed by all. Having the client involved in staffing seemed to help some since the client had more difficulty manipulating a group. Small team staffings that were held in the beginning of the SCI Project were thought by the SCI Project staff to be more effective. However, these small teams were discontinued due to time constraints on the staff. It was recommended that problems be dealt with quickly and involve the client and the appropriate staff so that the potential for recurrence is minimized. Center expectations and consequences regarding behavior continue to be an issue for Center staff. Consistency in dealing with problems needs to be maintained. Clients very quickly picked up on how far they could go before they exceeded the boundaries of acceptable and unacceptable behavior. Much of this behavior was related to adjustment problems, and the staff were very quick to realize this and tried to work through these problems with the client. They were very understanding and tolerant of these problems. Psychiatric consults were obtained; but, in some cases, the doctor's comments and suggestions were not followed. Treatment Unit staff bore the brunt of these behavior problems but did not feel comfortable in dealing with them nor did they feel they had the authority to deal with them. For these reasons, some did not report behavior problems. The SCI Project nurse continued to encourage them to document behavior, report it to the counselors, and to use whatever resources they needed to control behavior since much of it involved life on their unit. The physiatrist was supportive in this area and did much to help control behavior.

A repeated pattern of misbehavior was usually established before the client was disciplinarily terminated. Preventive measures, such as counseling, did seem to be effective in many cases.

Increased attention needs to be given to pre-injury behavior patterns with regard to dealing with behavior problems after injury. In some cases, the records clearly document that the pre-injury personality and behavior caused the spinal cord injury - vehicular accidents while under the influence of drugs/alcohol, suicide attempts, etc. Staff concerns and issues focus on behavior management and modification. This also involves questions about reasonable time frames to achieve cooperative/compliant behavior. Here again, a well organized, congruent/consistent team approach is needed to effectively manage these cases.

Many spinal injury centers use a team approach with a physician as the leader and coordinator of the client's physical restoration program. This physician makes the final decisions after team members give their opinions, suggestions, progress reports, and recommendations related to their various areas of expertise. This team also deals with behavior problems, and the physician decides if they can be resolved or, if not, when to discharge the client. This approach may be of assistance to our counselors who many times are held solely responsible for dealing with the behavior of clients in our current system.

In the area of leaves of absence, it was felt that, in some cases, these were granted too freely. Feeble excuses were sometimes accepted for leaving the Center and for late returns. Again, perhaps a team consensus would have been a better approach to frequent or extended absences where a pattern of leave abuse was evident.

The SCI Project nurse feels that keeping training students who require only attendant care on the Treatment Unit is not cost-effective. The Treatment Unit should be utilized for those clients in a physical restoration program who need the care, teaching, and daily follow-up to reach their maximum potential. Training students and readmissions who have had the benefit of previous education and nursing care might be placed in another area, perhaps in the intermediate care areas, and should contract with an orderly for their routine care. This orderly should be considered an attendant by the client and treated accordingly. The client could act as if he were the "employer" of this "attendant" and contract for only what care he is unable to do himself rather than be totally dependent on the Treatment Unit staff. The client should make arrangements for the times of day he will need this "attendant" and stick to that schedule. This approach would be contingent upon having adequate staff to operate these units. However, savings should be realized by avoiding the costlier per diem rates of the Treatment Unit. At times, it was noted that some newly injured clients were negatively influenced within the peer group by clients with older injuries who were still displaying maladaptive behavior.

Delays in receiving reports, x-rays, etc., have been reduced. The biggest delay is in receiving culture reports and then waiting for a doctor to review them and institute treatment. Perhaps a system could be devised whereby the laboratory could call and give a telephone report on any positive cultures, thereby allowing treatment to be started earlier.

In most spinal injury centers, a definite discharge date is set after the client's initial evaluation is done, and treatment goals are established. This is stated during the initial staffing during the first or second week of admission, and the client is involved with the determination of this date. For example, if a paraplegic is admitted September 1 with no secondary illnesses or injuries, he would be told he will be finished with his program by December 1, three months being the average length of stay for a paraplegic. He would be told he should be ready to move to dormitory living by October 15. These dates would be changed in the event of such things as intercurrent illnesses, family crises or death, psychiatric/psychological problems of extreme nature, etc. Otherwise, this expected date of discharge is adhered to. This system appears to give both staff and clients more incentive and a more definite goal to work toward and helps eliminate some of the unnecessary delays in the physical/mental restoration program.

Inadequate family involvement has been commented on in the section on family education. One more comment on this topic - This writer feels that the families should be contacted more frequently regarding progress and problems. The families should not be allowed to disengage themselves from the client's life if they are so inclined. They cannot be forced to become involved, but frequent contact will help keep the client "in their minds." If behavior problems occur, the family should be notified, especially if the client is a minor. At times a client is disciplinarily terminated with the family not knowing the magnitude or pattern of the behavioral problems. As a key resource in the rehabilitation process, the family must recognize and assume this responsibility.

Nurses have valid opinions and suggestions to contribute about vocational planning and employment. Due to daily contact with the clients and often seeing their "worst sides" and their "best sides," the nurse should be viewed as having reliable information to share with the rest of the team. It has been noted at times that clients verbally express to staff members a sincere desire to work when, in fact, they may be saying what they think they need to say in order to stay here, get equipment, home modifications, driver's education, etc. These conflicting signals from the client are a legitimate concern of the rehabilitation team and must be dealt with accordingly. They may be genuine statements or may be indicative of the struggle engaging the individual during the adjustment process to his disability. In either event, the nurse may be the only individual aware of this situation, and her input should be appropriately considered.

There was a noticeable emphasis on therapy during the three year SCI Project period, and this is not undesirable. In some cases, the client came here "just for therapy" or "to learn to walk again" or "to get braces" and did not want to participate in any other aspect of a complete Center program. Human nature dictates our desire and drive to become well and made whole after any injury or illness. Some stated that they were sent here by field counselors and physicians "just for therapy" and to get equipment. When they found that there were other aspects to a vocational rehabilitation program that they were expected to take advantage of, they sometimes became upset. Better advertising and explaining regarding the purposes of the Center need to be presented to all referral sources to prevent these inaccurate expectations and any dissatisfaction. As a partial remedy, pre-admission tours are recommended for as many clients as possible.

Occasionally, a therapist felt that it was more important for a client to stay in therapy than attend the weekly education class. In these cases, a compromise was always agreed upon. If the class subject was one in which the SCI nurse felt the client was knowledgable, he stayed in therapy. If she felt he definitely needed the class, the therapist agreed and excused him from therapy or rearranged the therapy schedule.

There were some instances where clients did not wish to attend class or group counseling sessions, against the advice of the SCI nurse or psychologist. Attendance was not made mandatory, but it was included in their program. Judgments regarding who needed to attend and who did not should have rested with the SCI Project staff, in this writer's opinion, or been a majority decision of the treatment team.

Understaffing, especially with orderlies, caused some problems on the Treatment Unit and caused delays in some clients' programs. This has been a chronic, long-standing problem, and no solution seems forthcoming. The pay scale is low, the work repetitious and unpleasant at times, and the career mobility is absent. In spite of orderly shortages, it was noted that the nursing staff were very capable of filling in the gaps when it was critical to do so. Many were observed to be very willing to pitch in and do whatever needed to be done, and those people carried the load for some of the others. It is felt that the nursing unit has the potential to be a quality care giving, teaching, and motivating rehabilitation care unit if concerted efforts are made to achieve this common goal. This would involve not only the unit staff's hard work and efforts but support, help, and cooperation from all. The Medical Director's and physicians' support are essential components with these individuals serving in a leadership role in the upgrading of standards of care. Salaries need to become competitive, recruitment efforts more enticing and innovative, continuing education opportunities provided, and career mobility opportunities enhanced.

The nationwide nursing shortage and the lucrative offers being made to nurses from the private sector make the situation here even more critical. We cannot afford to continue with the status quo and must face these problems now. The payoff will be better care, healthier and more satisfied clients, better educated clients and families, decreased lengths of stay, and a better educated and more dedicated staff.

This narrative on other possible causes of increased lengths of stay was not intended to be critical of any one person or department. Hopefully, it will provide some food for thought on how to improve our services to disabled people and how to work together toward a common goal: preparing disabled people to return or begin to work, making the best us of our available resources.

CHAPTER 8

CLIENT EDUCATION

The SCI nurse coordinated and supervised a weekly client/family education class on various aspects of spinal cord injury. She taught several classes on health care. The nurse wrote a self-care manual for SCI clients entitled "healing and wheeling." This was widely distributed to clients, families, former clients, field staff, Center staff, CAMC/General Division SCI Unit, nursing school instructors, etc. It was up-dated and revised during the final months of the SCI Project and turned over to the Research & Training Center for printing and further distribution.

Individual teaching and follow-up was done by the SCI nurse with all SCI clients entering the Center, including readmissions and SCI students in WVRC vocational training programs. A file was kept by the SCI nurse on all SCI clients. A pre-test was given to all clients willing to take it, and a post-test was given following individual teaching and attendance at weekly classes. (A copy of the test and test results are included in this section.) The SCI nurse found herself also teaching non-SCI clients with similar disabilities and health problems at the request of various staff members. The weekly classes were often attended by non-SCI clients.

Individual family teaching was done with all families who came to the Center when the nurse was made aware that the families were visiting. She did not teach those who visited on the weekends or in the evenings, but frequently left instructions for other staff regarding what areas of care needed to be taught or emphasized. This was carried out adequately by the WVRC Treatment Unit nursing staff.

Problems/Recommendations

At the beginning of the SCI Project, as the educational needs were assessed, it was apparent that a more organized and consistent method of educating the SCI client was needed. Teaching was done by various individuals with the client sometimes getting conflicting instructions and information. Treatment and care plans were usually the responsibility of the nursing staff to explain to the clients and families. Clients were being taught procedures, but not always why they had to be done. Many clients came here with very little knowledge regarding the spinal cord, what it does, and how injury affects it.

All this improved with implementation of the educational activities of the SCI Project and the arrival of a newly employed physiatrist. The physiatrist not only teaches classes upon request but talks to clients and families individually regarding the effects and care of spinal cord injury. He is supportive of all educational efforts and frequently reinforces the nursing staff regarding such things as skin care and bowel and bladder management.

It was hoped that there would be more carry-over of educational efforts from the SCI Project nurse to the Treatment Unit staff, but it was noted throughout the SCI Project period that although they were supportive and helfpul regarding the Project nurse's efforts, some of the staff tended to refer most problems, teaching, and follow-up of the SCI clients to the Project nurse. Part of the reason for this may have been due to the lack of specificity in the job description of the Project nurse at the beginning of the Project. Suggestions were made regarding educational activities for implementation by the Treatment Unit staff to complement the Project's efforts, and most of the staff were cooperative regarding these suggestions. Most of the nursing staff were very willing to teach clients on a one-to-one basis but were less comfortable in teaching a topic to a group. The SCI nurse also found much evidence of teaching going on from day to day, but little documentation was done regarding what was taught and the results of the teaching on client behavior and self-care.

It is recommended that one nurse be responsible for continued coordination and implementation of client/family education for all disabilities and a consistent method of documentation and evaluation be instituted. This does not mean that one nurse should do all the teaching but that she should supervise a consistent teaching program and provide instruction, help, and support to the staff who will be doing the teaching in their various areas of expertise.

WVRC administration is also challenged to concretely demonstrate their level of support for client education. The staff person designated to administer the client education programs must have the necessary authority to develop and administer these programs. All client serving personnel must be fully supportive of these programs. It may also be necessary to purchase additional educational materials and audiovisual equipment to ensure the provision of quality programs.

Pre-test and post-test results document an improvement in learning in the clients who took the written examination. Some clients were unwilling to take this with the most common reason being, "I don't want to fool with it." Those who did take the tests were very much interested in their post-test score to see if they scored higher. This was found to be an effective teaching and evaluation tool and could be useful with other disabilities where education regarding the disability is important to health, longevity, and productivity.

The Project occupational therapist was responsible for providing information for three sections of the SCI client education manual: self-care, wheelchair and appliance maintenance, and accessibility. The list of West Virginia vendors in the manual should be reviewed and, if necessary, updated annually.

SCI CLIENT EDUCATION TEST

Directions: Circle the letter in front of the correct answer.

1. The effects of spinal cord injury are the result of the damaged connection between the spinal cord and what other portion of the central nervous system?

   a. brain

   b. heart

   c. bowel

   d. bladder

2. The nerve fibers coming off the spinal cord going to various parts of the body are chiefly two types, known as:

   a. motor and sensory nerves

   b. autonomic nerves

   c. motor and peripheral nerves

   d. sensory and peripheral nerves

3. The most common cause of spinal cord injury in this country is:

   a. diving accidents

   b. falls

   c. gunshot wounds

   d. vehicular accidents

4. Damage to the spinal cord can cause all of the following things, except one. Which one does it not cause?

   a. blocking of the nerve impulses to and from the brain

   b. loss of sensation and movement

   c. loss of bowel and bladder control

   d. brain damage

5. The most common cause of death in the spinal cord injured population is:

   a. renal (kidney) disease

   b. pressure sores

c. pneumonia

d. heart attacks

6. Though spinal nerve roots that are destroyed do not "grow back," if some nerve fibers are uninjured, some improvememt in function may occur up to:

    a. 5-6 years post-injury

    b. 1-2 years post-injury

    c. 8-10 years post-injury

    d. 10-12 years post injury

7. Due to lack of sensation and impaired circulation, skin sores are a problem for the SCI person. Which is the most common cause of skin sores?

    a. burns

    b. pressure

    c. bruises

    d. malnutrition

8. The most effective way of preventing a pressure sore on your "bottom" is:

    a. getting a backrub every night

    b. doing "push-ups" or changing position frequently

    c. sitting on a wheelchair cushion

    d. stay in bed and turn every two hours

9. Daily checking of your skin for red areas is the responsibility of:

    a. the orderly

    b. your family

    c. yourself

    d. the nurse

10. The best method of preventing a red area from becoming an open sore is:

    a. stay off the red area until it goes away

    b. rub it hard with alcohol

c. put a dressing on it

d. put merthiolate on it

11. Even though the bladder may empty by reflex, there may be urine left in the bladder after voiding that can breed infection. This is known as:

    a. residual urine

    b. contaminated urine

    c. sterile urine

    d. reflux urine

12. An intermittent catheterization program is scheduled to empty the bladder at regular times. Which of the following is not a purpose of the intermittent catheterization program?

    a. to eventually become catheter-free if reflex voiding with adequate emptying occurs

    b. to help prevent infection

    c. to prevent the bladder from becoming too full, causing reflux

    d. to teach your family sterile technique

13. The main reason to learn self intermittent catheterization if you are able is:

    a. to make it easier on the staff

    b. because your body is more resistant to its own bacteria than to someone else's

    c. so your family won't have to do it

    d. so you can do it whenever it's convenient for you

14. Bladder infection is a frequent complication following cord injury. Which one of the following things is not a symptom of infection?

    a. foul-smelling, cloudy urine

    b. nausea and/or vomiting

    c. fever and chills

    d. generalized red rash

15. A serious complication for persons with injuries above T-6 is autonomic dysreflexia. Which of the following are not signs and symptoms of autonomic dysreflexia?

    a. pounding headache and elevated blood pressure

    b. chills, shivering, and goose pimples

    c. severe sweating of the forehead and flushed face

    d. increased pulse rate and dilated pupils

16. The most common cause of bladder stones in the spinal cord injured person is:

    a. Foley catheters

    b. immobility and frequent urinary infections

    c. drinking Cranberry juice every day

    d. taking a lot of vitamin C tablets

17. The technique of stimulating voiding by pushing in and down over the bladder is known as:

    a. Credé

    b. catheterization

    c. cystoscopy

    d. reflex voiding

18. An x-ray, using an injection of dye into a vein, done to visualize the kidneys, ureters, and bladder is called:

    a. a cystoscopy

    b. a Retrograde urethrogram

    c. an intravenous pyelogram (I.V.P.)

    d. a cystometrogram

19. A laboratory test done on the urine to see what bacteria is growing and what antibiotics can be given to treat it is called:

    a. an I.V.P.

    b. urinalysis

    c. CBC

    d. culture and sensitivity

20. The most important reason for establishing a regular time to do your bowel program is:

    a. to prevent gastroenteritis

    b. to avoid bowel accidents

    c. so rehabilitation will furnish an accessible bathroom

    d. for the convenience of the staff

21. You have heard that following a meal is the best time to do your bowel program. The reason for this is:

    a. the food stimulates the gastro-colic reflex which helps move stool through the intestines

    b. after supper is more convenient for the staff

    c. food moves fast through a neurogenic bowel so you can avoid a bowel accident if you evacuate your bowels right after a meal

    d. the liquids you drink with your meal help to soften the stool

22. Which of the following things would not help establish a successful bowel program?

    a. drinking alcoholic beverages

    b. drinking a hot liquid prior to doing your bowel program

    c. eating a well-balanced diet that includes bulk forming foods and drinking fluids

    d. doing digital stimulation after the suppository program

23. Reflex erections are those occurring by contact with the genitals or other physical stimulation. Which of the following statements is not true of reflex erections?

    a. can be triggered by catheterization

    b. often doesn't last long enough for intercourse

    c. can occur whenever you want it to

    d. can occur at any time

24. Psychogenic erections are those that occur from a stimulating thought or sight and requires intact connections from the brain to what area of the cord?

    a. lumbar

b. cervical

c. sacral

d. thoracic

25. A spinal cord injured female's sexual functioning is sometimes impaired by:

a. inability to menstruate

b. inability to get pregnant

c. inability to climax due to loss of sensation

d. inability to have intercourse due to loss of mobility

26. "Chest congestion," upper respiratory infection, or pneumonia is dangerous for a quadriplegic because of the inability to cough up mucus. Which of the following things does not help you get mucus up out of your lungs?

a. assistive coughing (pressing on your abdomen below the rib cage)

b. deep breathing

c. smoking cigarettes

d. postural drainage

27. Which of the following signs or symptoms would not be a sign of respiratory infection or pneumonia?

a. runny nose

b. fever and/or chills

c. chest congestion

d. coughing up yellow or green mucus

28. After cord injury, many reflexes continue to work, but cannot be controlled by the brain. These uncontrolled reflexes are called:

a. impulses

b. spasms

c. dysreflexia

d. contractures

29. A certain amount of spasticity may be helpful to you because:

    a. it means you're getting some return of motor function

    b. it means your brain and spinal cord are still working together

    c. it helps maintain muscle tone

    d. it exercises your limbs so that you won't need therapy

30. An increase in spasticity may indicate something is wrong. Which of the following would not cause increased spasticity?

    a. bladder or kidney stones

    b. pressure sores

    c. infection

    d. swelling of the ankles

31. Though the exact cause of pain in the spinal cord injured is not known, it is thought to be due to:

    a. a blood clot in the spinal cord

    b. scarring of the cord at the level of injury

    c. depression

    d. brain damage

32. Parasthesia is a term used in medicine to describe "weird" sensations. Which of the following sensation would not be described as a parasthesia?

    a. numbness and tingling

    b. "pins and needles"

    c. "burning" sensation

    d. dizziness

33. Due to your injury, your body does not react to external temperatures because the messages are not getting through to the brain. Which of the following is not a potential hazard of this lack of temperature control?

    a. sunburn

    b. heat stroke

    c. frostbite

    d. nausea and vomiting

34. Sweating is sometimes a complication of the altered temperature control, especially in the quadriplegic. Which of the following things might trigger excessive sweating?

    a. pressure sores, distended bowel or bladder, bladder infection

    b. sitting in the sun too long

    c. eating hot peppers on pizza

    d. ingrown toenail, spasms, and parasthesias

35. "Black-outs" or feeling faint and dizzy are sometimes a problem for quadriplegics when getting up; this means that:

    a. the blood pressure shot up suddenly

    b. the blood pressure dropped suddenly

    c. blood pressure stays the same, but the brain swelled

    d. the back of the wheelchair is too high

36. A quadriplegic's blood pressure is usually:

    a. lower than normal

    b. normal

    c. higher than normal

    d. goes up and down frequently

37. Several things can be done to relieve or prevent the feeling of faintness. Which of the following things should not be done?

    a. raise the head of the bed slowly and prop yourself in a sitting position for a few minutes before getting out into your chair

    b. wear an abdominal binder and elastic hose when you are up

    c. have someone tilt your wheelchair backwards for a few minutes

    d. take a Valium for the dizziness

38. One major reason for doing range of motion exercises is to prevent:

    a. fractures

    b. pressure sores

    c. contractures

    d. postural hypotension

44. Family understanding and support are very important to the success of a spinal cord injured client's rehabilitation. Which of the following is not an area in which the family might help?

    a. prescribing the right wheelchair and adaptive aids

    b. maintaining your level of independence

    c. sexual adjustment

    d. transportation

45. Telescoping parts, such as removable arms, should be lubricated with:

    a. paraffin wax or silicone spray

    b. Three-in-one oil

    c. motor oil

    d. K-Y jelly

46. Wheelchair upholstery should be cleaned with:

    a. abrasive cleansers

    b. car wax

    c. soap and water

    d. Clorox

47. Ramps for wheelchairs should be made of a non-slip surface and have a one inch rise for every 12 inches in length. How wide should it be?

    a. 36 inches

    b. 26 inches

    c. 24 inches

    d. 46 inches

48. Pushing your own wheelchair is beneficial because:

    a. it relieves the aide and orderly to go help someone else

    b. it strengthens your arms and shoulders

    c. it prevents pressure sores on your bottom

    d. it prevents spasms

39. Formation of calcium (bone) deposits in and around the hip joints and sometimes in the knees is called:

    a. contractures

    b. pathological fractures

    c. heterotopic ossification

    d. arthritis

40. Which of the following symptoms is not a sign of a blood clot?

    a. redness

    b. swelling

    c. bleeding

    d. hot to touch

41. Swelling of the feet and ankles is caused by:

    a. blood collecting in the tissues

    b. extra fluid collecting in the tissues

    c. too much exercise

    d. wearing elastic hose

42. A universal cuff may be used by quadriplegics for all of the following things, except one. For which one is it not used?

    a. holding eating utensils and tooth brushes

    b. typing

    c. holding a pencil or pen

    d. pushing your wheelchair

43. Metal splints and metal parts of a wheelchair should be cleaned by which of the following methods?

    a. wash in cold, soapy water, rinse, and dry

    b. soak in bleach, rinse, and dry

    c. scrub with Comet or Ajax

    d. damp, soft cloth

49. Which of the following items is not a necessity in the home of most quadriplegics?

    a. electric bed

    b. shower chair

    c. bathtub bench

    d. padded commode

50. Your rehabilitation counselor can help you with all the following things except one. With which one could he/she not help?

    a. job training and placement

    b. counseling regarding problems

    c. advising regarding medical procedures and medication

    d. home modifications or accessibility

September 1, 1980, to April 30, 1982

	Pre-test % of test items answered correctly	Post-test % of test items answered correctly	% Increase
	Males		
1.	46	62	16
2.	75	84	9
3.	70	82	12
4.	74	86	12
5.	62	68	6
6.	62	68	6
7.	34	94	60
8.	57	65	8
9.	42	76	34
10.	42	80	38
11.	58	90	32
12.	60	89	29
13.	55	62	7
14.	79	97	18
15.	76	81	5
16.	60	64	4
17.	40	76	36
18.	76	86	10

N = 18 - Increase of 19% improvement for the group

	Females		
1.	47	81	34
2.	66	80	14
3.	84	89	5
4.	75	88	13
5.	38	72	34

N = 5 - Increase of 20% improvement for the group

CHAPTER 9

SPINAL CORD INJURY CLIENT/FAMILY EDUCATION PROGRAMS

The development and implementation of these programs was one of the primary responsibilities of the SCI Project nurse/educator. The weekly classes were open to anyone who had an interest in and a need to know more about spinal cord injury. The primary target audience was our SCI Project clients, but the weekly classes also provided in-service training for a number of other individuals. Reference is made to the attached list of classes and those in attendance.

These weekly classes were widely advertised through internal memos sent to all SCI Project clients, counselors, instructors, therapists, nursing staff, etc. Advance schedules were also published in Director's Letters which go to all Agency staff statewide.

Attendance at the family education programs was by invitation only. This provided for a smaller group of participants and fostered the type of atmosphere where family members could express their intimate concerns. Interaction and dialogue among the members from different families was a very important part of the program as they recognized and shared areas of mutual concern.

Two formal family education programs were held consisting of two-day seminars covering several topics pertinent to spinal cord injury and the rehabilitation of the spinal cord injured person. (See copies of the attached agendas for both seminars.)

The SCI Project nurse took responsibility for scheduling the weekly classes. She selected the topics, obtained the speakers, made up the schedules, kept attendance, and taught several of the classes. She also had to call and contact the clients every week to assure their attendance in class.

The SCI Project nurse developed the agendas for the family education programs, selected and contacted speakers, presented the sessions on bowel program, introduced the speakers, answered questions, and helped the SCI Project staff to coordinate and implement the programs.

These weekly SCI client education classes evolved into a fixed teaching module whose individual elements were repeated on a regular basis to permit each client to have benefit of the full program. The topics covered have been the following:

October, November, December - 1979

The Spinal Cord - What It Does and How Injury Affects It
Ann Harrison, R. N., SCI Project
(Attended by 9 clients and 2 counselors)

Skin Care
Ann Harrison, R. N.
(Attended by 10 clients and 2 counselors; several of the clients were on patient carriers because of decubiti)

The Neurogenic Bladder and Its Management
Ann Harrison, R. N.
(Attended by 10 clients, 1 client's wife, and 3 counselors)

Home and Community Accessibility and the Wheelchair Care, Maintenance, and Terminology of Parts
Fran Ingram, L. O. T. R.
(Attendance was not kept)

Guest Speakers - Frank Young, Quadriplegic, Retired Draftsman with West Virginia Department of Highways

Nancy Potter, Paraplegic, Homemaker, Active in a host of community and civic affairs

(Attended by 10 clients, 1 counselor, and 1 non-SCI client)

January, February, March - 1980

Anatomy and Physiology of the Male Reproductive System and the Effects of Injury on Sexual Functioning
Thomas Janicki, M. D., WVRC Medical Consultant
(Attended by 8 SCI clients, 1 non-SCI client who has a spinal cord disease, the wife of the non-SCI client, and 2 counselor interns)

Alcohol and Drugs
W. E. Henderson, Psychologist, SCI Project
(Attended by 8 clients, 2 counselors, and 2 counselor interns)

Driver's Education
William E. Ramsey, WVRC Driver's Education Instructor
(Attended by 11 SCI clients, 1 brain damaged client, and 2 counselor interns)

Nutrition - Part I
Georgette Stout, WVRC Dietician
(Attended by 10 SCI clients, 1 amputee client, 2 Treatment Unit orderlies who were new employees, 2 counselor interns, and 3 family members of SCI clients)

Nutrition - Part II
Georgette Stout, WVRC Dietician
(Attended by 10 SCI clients, 2 family members, 1 counselor intern, and 1 counselor)

Guest Speakers - Harold Kocher, Paraplegic, Coordinator, Vocational/Technical Training (Spoke on SCI from a personal viewpoint)

R. T. Mallory, Reverend, WVRC Chaplain (Spoke on the WVRC Chapel and religious services)

(Attended by 10 SCI clients, 2 family members, 1 counselor, and 1 counselor intern)

Review of Past Classes: During this session, we showed two movies entitled "Consequences" and "Changes." We also reviewed the past topics and materials covered and solicited input and suggestions from the spinal cord injured students. The students indicated that they would like to have more movies concerning the topic of spinal cord injury and more frequent guest speakers. The students did indicate that they felt that the classes were beneficial, and they were interested in continuing with them.
(Attended by 4 counselors, 1 counselor intern, assistant administrator -- Medical Services, 1 non-SCI client, and 7 SCI clients)

Discharge Planning and Followup and a movie entitled "Gravity is My Enemy"
(Attended by 14 SCI clients, 1 non-SCI client, and 3 counselors)
At the conclusion of this session, we also held discussions concerning the proposed family education program. Prior to this meeting, we had circulated to the spinal cord injured clients copies of the original proposal made by John Snyder, field counselor (coordinator for a recently completed field based SCI Project), and asked them to review this with recommendations to the SCI Project staff. We received favorable feedback from the clients in terms of the need for this type of program.

Movie shown entitled "A Different Approach" and discussion on family education program
(Attended by 10 clients and 2 counselors)
All clients approved the family education program and gave suggestions regarding times and topics to discuss. Much emphasis was placed by clients on physical care and activities of daily living skills and things that families need to know. We also spent some time discussing the mechanics of implementing the program, as well as its actual content.

Rick McGraw, Therapy Counselor, discussed the WVRC Vocational Evaluation - Purpose, Procedure, Outcome
(Attended by 8 clients, 1 counselor intern, 1 instructor from the University of Charleston Nursing School, and 1 student nurse)

April, May, June - 1980

Financial Disincentives to Employment
Joe Lawrence, Chief, Special Services, WVDVR
(Attended by 6 clients, 1 counselor, and 1 counselor intern)

Skin Care
Linda Hennig, R. N., Nurse-Consultant from Marshall University School of Nursing
(Attended by 9 clients, 1 counselor intern, 11 Treatment Unit staff, 3 family members, 4 nursing assistant students, and 1 nursing assistant instructor)

Workmen's Compensation
John Farley, Director of Claims Management, West Virginia Workmen's Compensation Fund
Joe Lawrence, Chief, Special Services, WVDVR
(Attended by 5 clients and 1 counselor intern)

Philosophy and Process of Vocational Rehabilitation
Bill F. Gardner, Assistant Director, Support Services, WVDVR
(Attended by 8 clients)

Affirmative Action
Sandra Ashley, Chief, Industrial Relations and Placement Services, WVDVR
(Attended by 2 counselors, 1 family member, 10 clients, 2 O. T. interns, and 1 instructor from WVRC training program)

Job Readiness and Job Placement
Virginia Hickman, WVRC Exit Program
Dan Samples, WVRC Placement Services
(Attended by 7 clients & 1 University of Charleston nursing student)

Physical Therapy--Exercises & Respiratory Care
Kathy Chaney, WVRC Physical Therapist
(Attended by 6 clients, 1 counselor, 2 instructors from training areas, and 1 physician)

Bowel Program
Linda Hennig, R. N., Nurse-Consultant from Marshall Univeristy
(Attended by 9 SCI clients, 16 Treatment Unit staff, 6 non-SCI clients--strokes, M. S., etc., 1 instructor from WVRC training area, 1 lawyer, 2 O. T. interns, 2 P. T. interns, 4 nursing assistant students, and the instructor for nursing assistant training area at WVRC)

Post-Discharge Complications
Donna Busch, R. N., ADL Nurse at Charleston General Hospital, SCI Unit
(Attended by 16 SCI clients, 1 therapy counselor, 2 Treatment Unit staff, 2 WVRC training instructors, 2 P. T. interns, 2 O. T. interns, and 1 WVRC training area counselor)

Film Festival - "Effects of Spinal Cord Injury"
"Activities in Your New Life"
"Come Work With Us"
(Attended by 8 SCI clients, 1 WVRC training instructor, 1 WVRC training counselor)

WVRC Sheltered Workshop Program
John Parker, Supervisor, WVRC Workshop
(Attended by 8 SCI clients)

July, August, September - 1980

At this point, the SCI Project had completed the first full cycle of the curriculum. All newly admitted spinal cord injured clients and those spinal cord injured clients needing refresher work were included in the second cycle of classes.

Bladder Management
Linda Hennig, R. N., Nurse-Consultant from Marshall University
(Attended by 9 SCI clients, 1 WVRC training instructor, and 7 Treatment Unit staff)

Medical Care in Norway
Turid Axelson, Occupational Therapist from Norway
(Attended by 8 SCI clients, 1 WVRC instructor, 1 O. T., 3 O. T. interns, and 1 therapy counselor)

Social Security Programs
John Harrison, Chief, Casework Services
(Attended by 13 SCI clients, 1 non-SCI client, and 1 counselor)

Interviewing for a Job - Film: "The Interview"
Joseph Lobuts, Assistant Director, Personnel, WVDVR
Linda Moran, Staff Development Unit, WVDVR
(Attended by 12 SCI clients, 2 counselors, and 2 instructors)

Structural Barriers
John Bright, Coordinator, Structural Barriers Program, WVDVR
(Attended by 12 SCI clients, 2 P. T. interns, 2 O. T. interns, 1 O. T., 1 instructor, and 1 non-SCI client)

Job Placement of SCI Clients
John Snyder, Field Counselor, Clarksburg District DVR Office
(Attended by 16 SCI clients and 2 instructors)

Role of West Virginia Rehabilitation Center in Vocational Rehabilitation Process
George F. Gay, Center Administrator
(Attended by 14 SCI clients, 2 counselors, and 1 instructor)

Effects of Spinal Cord Injury - Film & Lecture
Prasadarao B. Mukkamala, M. D., Physiatrist, WVRC Medical Director
(Attended by 16 SCI clients, 2 therapy counselors, 1 dorm counselor, 2 P. T. interns, 2 instructors, 1 counselor intern, 2 Treatment Unit nurses, WVRC Assistant Administrator of Medical Services, WVRC Chaplain, and 1 staff person from Communications Unit)

Skin Care
Linda Hennig, R. N., Nurse-Consultant from Marshall University
(Attended by 9 SCI clients, 2 O. T. interns, WVRC Chaplain)

Bowel Program
Linda Hennig, R. N., Nurse-Consultant from Marshall University
(Attended by 10 SCI clients and 1 counselor intern)

October, November, December - 1980

Nutrition - Part I
Georgette Stout, WVRC Dietician
(Attended by 9 SCI clients, 1 non-SCI client, 1 counselor intern, and 3 instructors)

Nutrition - Part II
Georgette Stout, WVRC Dietician
(Attended by 7 SCI clients, 1 counselor intern, and 1 instructor)

The Neurogenic Bladder (Tape by Linda Hennig, R. N.)
Ann Harrison, R. N., SCI Project
(Attended by 10 SCI clients)

Activities of Daily Living (ADL) Skills
Fran Ingram, L. O. T. R., SCI Project
(Attended by 11 SCI clients, 2 instructors, and 1 physician)

Care & Maintenance of Equipment
Fran Ingram, L. O. T. R., SCI Project
(Attended by 9 SCI clients, 1 instructor, 1 counselor intern, 1 physician, and 1 medical school intern)

Emotional & Social Effects of Spinal Cord Injury
W. E. Henderson, Psychologist, SCI Project
(Attended by 11 SCI clients, 1 non-traumatic SCI client, 2 instructors, 4 therapy counselors, 1 counselor intern, 1 medical school resident, 1 public information specialist) The public information specialist interviewed clients following the class for press releases being written on the SCI Project.

Role of the Physical Therapist
Becky Nelson, R. P. T., WVRC
(Attended by 10 SCI clients, 1 client's wife, 1 medical student, 1 counselor intern, 1 therapy counselor, 1 instructor, and 1 public information specialist)

Holistic Approach to Care & Employment of Spinal Cord Injured
Patty Pearson, WVRC Therapy Counselor
This was a report on a meeting attended at Woodrow Wilson Rehabilitation Center in Virginia.
(Attended by 11 SCI clients, 4 counselors, 1 non-SCI client, and 1 physician)

January, February, March - 1981

Recreation
Mary Fannin, WVRC Recreation Department
(Attended by 5 SCI clients, 1 field counselor, WVRC Chaplain, 2 WVRC instructors, and 1 O. T. intern)

Some Other Physical Changes and Complications
Ann Harrison, R. N., SCI Project
(Attended by 13 SCI clients, 2 family members, and 3 WVRC counselors)

The Neurogenic Bladder and Sexual Dysfunction in the Spinal Cord Injured
Dr. Stanley Kandzari, Urologist from WVU Medical Center
Dr. Greg Franchini, Psychiatrist from WVU Medical Center
(Attended by 19 SCI clients, 45 WVRC staff, 2 non-SCI clients, 5 WVDVR field staff, 1 staff person from Charleston General Hospital, and 4 WVRC interns)

Orientation Tape Done by W. E. Henderson - View and obtain feedback
W. E. Henderson, Psychologist, SCI Project
(Attended by 10 SCI clients, 1 family member, 2 WVRC counselors, 1 instructor, 1 O. T. intern, and 1 Marshall University medical student)

Driver's Education
William E. Ramsey, WVRC Driver's Education Instructor
(Attended by 13 SCI clients, 1 WVRC counselor, 2 instructors, 1 O. T. intern, and 1 Marshall University medical student)

Special Transportation for the Handicapped
Ms. Carson Frazier and Ms. Norma Boone, Members of the Special Transportation Advisory Committee
(Attended by 9 SCI clients, 1 family member, 1 instructor, and 1 O. T. intern)

Guest Speaker - Loretta Bays, WVDVR Counselor at Beckley Appalachian Regional Hospital Unit (Paraplegic)
Movie: "Outside"
(Attended by 14 SCI clients, 1 instructor, 3 orderlies, 1 O. T. intern, and 1 WVRC counselor)

Autonomic Dysreflexia Videotape by Linda Hennig, R. N., from Marshall University
Ann Harrison, R. N., SCI Project
(Attended by 9 SCI clients, 1 family member, and 1 O. T. intern)

Public Health Services
Beverly Hillyard, R. N., Kanawha County Health Department
(Attended by 10 SCI clients, 1 family member, and 1 instructor)

Vocational Evaluation
Maria Galford, Work Evaluator, WVRC
(Attended by 9 SCI clients, 1 State Office staff member, and 1 O. T. intern)

Intermittent Catheterization
Ann Harrison, R. N., SCI Project
(Attended by 11 SCI clients and 1 family member)

April, May, June - 1981

Training Areas at WVRC
Harold Kocher, Coordinator, Vocational/Technical Training
(Attended by 15 SCI clients and 1 instructor)

Movie: "Touchdown"
(Attended by 15 SCI clients, 2 counselors, 1 vocational evaluator, 1 physician, 1 O. T. intern, and 1 non-SCI client)

Social Security Benefits for the Disabled
David Cleland, Assistant Chief, Casework Services, WVDVR
(Attended by 13 SCI clients and 3 therapy counselors)

Substance Use and Misuse
W. E. Henderson, Psychologist, SCI Project
(Attended by 14 SCI clients and 2 instructors)

Activities of Daily Living Skills - Slide Presentation
Fran Ingram, L. O. T. R., SCI Project
(Attended by 16 SCI clients and 1 counselor)

Career Development
David Steurer, WVDVR Industrial Rehabilitation Consultant
David Morton, Career Development Counselor
(Attended by 15 SCI clients, 4 non-SCI clients, 2 instructors, and 1 counselor)

Affirmative Action
Sandra Ashley, WVDVR Chief of Industrial Relations & Placement Services
(Attended by 16 SCI clients, 1 instructor, 1 non-SCI client, 1 spouse, 1 psychology intern, 1 O. T. intern, and 1 homemaker intern)

Job Interviews
Margaret Robinson, WVDVR Personnel Specialist
(Attended by 11 SCI clients, 1 instructor, and 2 non-SCI clients)

C & P Telephone Services Center for Disabled
Joan Ntiros, Service Supervisor, Washington, D.C.
(Attended by 15 SCI clients, 8 non-SCI clients, 17 staff, 5 interns, and 6 visitors from outside WVRC)

Welfare Benefits
Barbara White, Division of Medical Care, W. Va. Dept. of Welfare
Janie Williams, Economic Services Program, W. Va. Dept. of Welfare
(Attended by 18 SCI clients, 2 interns, and 1 counselor)

Insurance Benefits for the Spinal Cord Injured
Gene Estes, Provider Relations, Blue Cross/Blue Shield Insurance Company
(Attended by 13 SCI clients and 3 interns)

Guest Speaker - Charlie Akers, Self-employed paraplegic from Pt. Pleasant, West Virginia
(Attended by 13 SCI clients, 5 interns, and 3 family members)

July, August, September - 1981

Complications of Spinal Cord Injury
Ann Harrison, R. N., SCI Project
(Attended by 1 field counselor, Supervisor of Vocational Evaluation, 2 interns, and 10 SCI clients)

Structural Barriers
John Bright, Coordinator, Structural Barriers Program, WVDVR
(Attended by 1 field counselor, 2 therapy counselors, and 11 SCI clients)

Guest Speaker - Frank Young, Quadriplegic, formerly with Dept. of Highways - Personal Perspective
(Attended by 11 SCI clients, 1 non-SCI client, 1 psychology intern, and 1 field counselor)

Role of Rehabilitation Counselor in Job Placement
Hugh Dean, Field Counselor, Huntington District Office, WVDVR
(Attended by 4 SCI clients, 1 non-SCI client, 2 interns, 2 field counselors, Chief of Casework Services, and 2 therapy counselors)

Driver's Education Program, Van Demonstration
William E. Ramsey, WVRC Driver's Education Instructor
(Attended by 7 SCI clients, 2 non-SCI clients, and 2 interns)

Skin Care
Marion Callaghan, Director of Nurses, WVRC
(Attended by 8 SCI clients, 1 nursing staff, 3 P. T. interns, and 1 field counselor)

Grooming & Bathing Skills
Fran Ingram, L. O. T. R., SCI Project
(Attended by 6 SCI clients, 1 non-SCI client, 4 field counselors, and 1 graduate physician)

Guest Speaker - Diana Barton, Quadriplegic, Miss Wheelchair West Virginia
1981 and former client at WVRC
Movie: "Outside"
(Attended by 8 SCI clients, 3 counselor interns, 3 field counselors, 1 graduate medical student, 3 P. T. interns, and 3 therapy counselors)

Bowel Management
Ann Harrison, R. N., SCI Project
(Attended by 10 SCI clients, 2 field counselors, 1 counselor intern, and 1 graduate medical student)

October, November, December - 1981

Bladder Management
Ann Harrison, R. N., SCI Project
(Attended by 8 SCI clients, 2 field counselors, 2 counselor interns, and 1 graduate medical student)

Role of the Family and Friends in Rehabilitation
W. E. Henderson, Psychologist, SCI Project
(Attended by 10 SCI clients, 2 counselor interns, 1 O. T. intern, 1 optometrist, and 2 dental assistants)

Nutrition - Part I
Georgette Stout, WVRC Dietician
(Attended by 12 SCI clients, 1 O. T. intern, 1 R. N., 1 graduate physician, and 1 counselor intern)

Nutrition - Part II
Georgette Stout, WVRC Dietician
(Attended by 9 SCI clients, 1 non-traumatic SCI client, and 1 counselor intern)

Physical Therapy
Becky Nelson, R. P. T., WVRC
(Attended by 10 SCI clients, 1 non-traumatic SCI client, and 1 muscular dystrophy client)

Care of Equipment
Fran Ingram, L. O. T. R., SCI Project
(Attended by 11 SCI clients, 1 O. T. intern, 1 non-traumatic SCI client, 2 family members, 2 counselor interns, and 1 graduate physician)

Autonomic Dysreflexia and Other Complications of Spinal Cord Injury
Ann Harrison, R. N., SCI Project
(Attended by 11 SCI clients, 1 O. T. intern, 1 non-traumatic SCI client, 2 counselor interns, and 1 graduate physician)

Public Health Services
Beverly Hillyard, R. N., Kanawha County Public Health Department
(Attended by 11 SCI clients, 1 non-traumatic SCI disease client, 1 graduate physician, and 1 O. T. intern)

Substance Abuse
W. E. Henderson, Psychologist, SCI Project
(Attended by 10 SCI clients, 1 O. T. intern, 1 graduate physician, and 1 counselor intern)

January, February, March - 1982

Skin Care
Ann Harrison, R. N., SCI Project
(Attended by 11 SCI clients, 1 O. T., 1 counselor intern, and 1 non-SCI client--multiple sclerosis)

Guest Speaker - Nancy Potter, Paraplegic, Homemaker
Film: "Changes"
(Attended by 12 SCI clients, 1 O. T., 1 counselor intern, and 1 field counselor)

Bowel Management
Ann Harrison, R. N., SCI Project
(Attended by 11 SCI clients, 1 optometrist, and 1 counselor intern)

Grooming & Bathing Skills
Fran Ingram, L. O. T. R., SCI Project
(Attended by 12 SCI clients and 1 non-traumatic SCI client)

Social Security Benefits for the Disabled
Helen Huddy, Field Representative, Social Security Administration, Charleston, WV
(Attended by 12 SCI clients, 2 non-SCI clients, and 1 counselor intern)

Driver's Education
William E. Ramsey, Driver's Education Instructor, WVRC
(Attended by 12 SCI clients, 1 remedial education teacher, and 1 counselor intern)

Film: "A Different Approach"
(Attended by 14 SCI clients, 1 counselor intern, and 2 family members)

Bladder Management
Ann Harrison, R. N., SCI Project
(Attended by 14 SCI clients, 1 non-traumatic SCI client, and 1 P. T. intern)

Effects of Spinal Cord Injury on the Reproductive System
Prasadarao B. Mukkamala, M. D., Physiatrist, WVRC Medical Director
(Attended by 11 SCI clients, 3 non-SCI clients, 1 field counselor, and 1 counselor intern)

Vocational Evaluation
Maria Galford, Work Evaluator, WVRC Vocational Evaluation Unit
(Attended by 14 SCI clients, 2 non-traumatic quadriplegics, 3 physical therapy interns, and 2 University of Charleston nursing students)

April, May, June - 1982

Guest Speaker - Ron Yost, Resource Counselor, Center for Independent Living, Huntington, WV, Quadriplegic, former client
Film: "Outside"
(Attended by 3 non-SCI clients, 13 SCI clients, 1 field counselor, 1 attendant--Speaker's, 1 counselor intern, 1 therapy counselor, and 2 P. T. interns)

Other Complications of Spinal Cord Injury
Ann Harrison, R. N., SCI Project
(Attended by 13 SCI clients, 1 non-SCI client, 1 University of Charleston nursing student, 1 counselor intern, 1 recreation intern, and 3 P. T. interns)

Job Interviews
Margaret Robinson, Chief, Personnel Administration
(Attended by 13 SCI clients, 1 non-SCI client, and 4 University of Charleston nursing students)

Wheelchair Maintenance
Fran Ingram, L. O. T. R., SCI Project
Danny Bennett, O. T. Aide
(Attended by 12 SCI clients, 8 non-SCI clients, 1 O. T. intern, 2 P. T. interns, and 1 family member)

Guest Speaker - Diana Barton, Miss Wheelchair West Virginia 1981, Quadriplegic, former WVRC client
Film: "Touchdown"
(Attended by 12 SCI clients and 1 staff member)

Skin Care
Ann Harrison, R. N., SCI Project
(Attended by 8 SCI clients, 4 Workmen's Compensation counselors--Rehabilitation Section, and 11 non-SCI clients)

Activities of Daily Living Skills
Fran Ingram, L. O. T. R., SCI Project
(Attended by 9 SCI clients, 2 non-SCI clients, 4 Workmen's Compensation counselors, 2 family members, and 1 O. T. intern)

Physical Therapy
Becky Nelson, R. P. T., WVRC
(Attended by 7 SCI clients, 3 non-SCI clients, 4 Workmen's Compensation counselors, 1 P. T. intern, and 1 family member)

Bowel Management
Ann Harrison, R. N., SCI Project
(Attended by 10 SCI clients, 3 non-SCI clients, 5 nursing assistant students, 1 nursing instructor, and 2 P. T. interns)

Guest Speaker - Bill Coy, Social Worker, Pinecrest Hospital, Beckley, WV, Quadriplegic, former client of WVRC
(Attended by 11 SCI clients, 4 non-SCI clients, 3 P. T. and O. T. interns, 5 nursing assistant students, 1 Director of Nurses, 3 instructors, 1 counselor, 1 Chief of Special Services--Rehabilitation Services Section--WVDVR)

Nutrition
Georgette Stout, WVRC Dietician
(Attended by 9 SCI clients and 4 non-SCI clients)

SPINAL CORD INJURY FAMILY EDUCATION PROGRAM

November 16-17, 1981

Basic Services Conference Room

AGENDA

November 16, 1981

7:00-8:00 a.m.	Breakfast in Cafeteria
8:15 a.m.	Registration in Lobby of Medical Services Unit
8:30 a.m.	Introduction - Steve Hill, SCI Project Coordinator
	Welcome - John Harrison, Center Administrator
8:45 a.m.	"The Spinal Cord - What It Does and How Injury Affects It" Dr. Prasadarao Mukkamala, Physiatrist West Virginia Rehabilitation Center (Film - Effects of Spinal Cord Injury)
9:45 a.m.	"Vocational Rehabilitation Services & The Role of the Counselor" John Snyder, Field Counselor, Clarksburg District Pat McFann, Supervisor, Counseling Services, WVRC
10:15 a.m.	"Vocational Training Services at WVRC" Harold Kocher, Supervisor, Vocational Training Services Dan Samples, Coordinator, Placement Services
10:30 a.m.	"WVRC Medical Services" Roger Houston, Assistant Administrator, Medical Services
10:45 a.m.	Film - "Changes"
11:30 a.m.-12:30 p.m.	Lunch in Cafeteria
12:30-1:00 p.m.	Visit with Various Departments/Individual Family Conferences/Tour for Those Who Have Not Been to the West Virginia Rehabilitation Center
1:00 p.m.	"Skin Care" Donna Busch, R. N., ADL Nurse Charleston Area Medical Center/General Division Charleston, WV
2:00 p.m.	"Bowel Management" Ann Harrison, R. N. Spinal Cord Injury Project, WVRC
2:30 p.m.	Coffee Break
2:45 p.m.	Film - "Touchdown"

November 16, 1981 - Cont.

3:15 p.m.	"Psychological Effects of Spinal Cord Injury & The Role of the Family in Rehabilitation" W. Elliott Henderson, Psychologist, SCI Project, WVRC
4:00 p.m.	Discussion: Questions & Answers Spinal Cord Injury Project Staff & Marion Callaghan, Director of Nurses, WVRC
4:30-5:30 p.m.	Dinner in Cafeteria

November 17, 1981

7:00-8:00 a.m.	Breakfast in Cafeteria
8:15 a.m.	Registration in Lobby of Medical Services Unit
8:20 a.m.	Announcements - Steve Hill
8:30 a.m.	"Physical Therapy" Hugh Galford, R.P.T., Chief Physical Therapist, WVRC "Occupational Therapy" Fran Ingram, L.O.T.R., SCI Project, WVRC
10:30 a.m.	"Role of Recreation in Rehabilitation" Richard "Rocky" Bridges
11:00 a.m.	Film - "Outside"
11:30 a.m.-12:30 p.m.	Lunch
12:30 p.m.	"Bladder Management & Sexual Functioning" Dr. Prasadarao Mukkamala
1:30 p.m.	"Structural Barriers" John Bright, Coordinator, Structural Barriers Program Division of Vocational Rehabilitation
2:00 p.m.	Client Panel Discussion
3:00 p.m.	Adjourn - Steve Hill

SPINAL CORD INJURY PROJECT FAMILY EDUCATION PROGRAM

April 5-6, 1982

Basic Services Conference Room

AGENDA

April 5, 1982

7:00-8:00 a.m.	Breakfast in Cafeteria
8:15 a.m.	Registration in the Lobby of the Medical Services Unit
8:30 a.m.	Welcome - Steve Hill, SCI Project Coordinator "Role of the West Virginia Rehabilitation Center" John Harrison, Center Administrator
9:00 a.m.	"Vocational Rehabilitation Services and the Role of the Counselor" James Quarles, Field Counselor, Charleston Branch Office Pat McFann, Supervisor, Counseling Services, WVRC
9:30 a.m.	"The Spinal Cord - What It Does and How Injury Affects It" Dr. Prasadarao B. Mukkamala, Physiatrist, WVRC
10:30 a.m.	"Nursing Services at WVRC" Marion Callaghan, Director of Nursing, WVRC
10:45 a.m.	"Medical Services at WVRC" Roger R. Houston, Assistant Administrator, Medical Services
11:00 a.m.	Film - "Changes"
11:30 a.m.-12:30 p.m.	Lunch
12:30-1:00 p.m.	Visit with Various Departments/Individual Family Conferences/ Tour for Those Who Have Not Been to WVRC Rick McGraw, Therapy Counselor
1:00 p.m.	"Skin Care" Donna Busch, R. N., ADL Nurse Charleston Area Medical Center/General Division
2:00 p.m.	"Bowel Management" Ann Harrison, R. N., SCI Project, WVRC
2:30 p.m.	Coffee Break
2:45 p.m.	"Bladder Management and Sexual Functioning" Dr. Prasadarao B. Mukkamala
3:45 p.m.	Film - "Outside"
4:15 p.m.	Adjourn

April 6, 1982

7:00-8:00 a.m.	Breakfast in Cafeteria
8:15 a.m.	Registration in Lobby of Medical Services Unit
8:20 a.m.	Announcements - Steve Hill
8:30 a.m.	"Physical Therapy" Hugh Galford, R. P. T., Chief Physical Therapist, WVRC "Occupational Therapy" Frances Ingram, L. O. T. R., SCI Project, WVRC
10:30 a.m.	"Role of Recreation in Rehabilitation" Ann Lacy
11:00 a.m.	Film - "A Different Approach"
11:30 a.m.	"Vocational Training at WVRC and Job Placement" Harold Kocher, Supervisor, Vocational Training Dan Samples, Coordinator, Placement Services
12:00-1:00 p.m.	Lunch
1:00 p.m.	Film - "Touchdown"
1:30 p.m.	"Psychological Effects of Spinal Cord Injury and The Role of the Family in Rehabilitation" W. E. Henderson, Psychologist
2:00 p.m.	"Structural Barriers" John Bright, Coordinator, Structural Barriers Program Division of Vocational Rehabilitation
2:30 p.m.	Client Panel Discussion
3:15 p.m.	Adjourn - Steve Hill

Problems/Recommendations

Attendance of these weekly classes by family members was very poor. Due to the fact that these were held during the week and the fact that WVRC clients come from all over the state, it was difficult to get families to come to these classes. Another consideration is that many family members were in constant attendance during the acute stage of the injury and, of necessity, neglected jobs, other family functions, and other family members. In many spinal cord injury centers throughout the country with a large census of SCI patients, it is mandatory that families attend daily classes for a certain period of time to learn procedures and daily care routines of their injured family member. Since many of these centers work exclusively with SCI patients, this is realistic for them. It is questionable how feasible this would be at the WVRC with our multiple disability caseload, the limited number of personnel who are sufficiently knowledgeable of SCI, and the staff who would have the time to devote to the education of the families of this one disability. However, family education is greatly needed, and a system for this should be devised.

A better system for notifying the families of these weekly classes may have improved attendance. The clients themselves were urged to tell their family members, but they did not always do so. Various staff members would tell family members with whom they came in contact, but this was not a consistent method of notification. A few field counselors told the clients and families about the education program prior to admission, and the ADL nurse at the Charleston General Hospital SCI Unit informed all patients coming here from her unit about the classes. Follow-up letters and telelphone calls from the Center counselors or SCI Project staff may have improved attendance.

With regard to client attendance, this was somewhat of a problem for the duration of the SCI Project. Many clients "forgot" to come, did not want to attend, or refused to attend. The SCI Project nurse found herself "rounding up" clients for class every week, and this became very frustrating. Many clients did not want to miss therapy and felt the classes simply interfered with "getting well" or "walking again" since they felt they were only at the Center to receive therapy. Attendance did improve from a voluntary standpoint near the end of the three-year SCI Project. One factor was that attendance at the SCI classes was written into their rehabilitation program, and the counselor and other staff support of the classes increased. However, no action was taken if clients did not attend class. The SCI nurse's permission or judgment regarding being excused from class was not deemed necessary in some cases. These classes were never made formally mandatory; as, for example, attendance in therapy is mandatory. It should have been the decision of the nurse-educator whether a client had sufficient knowledge to be excused from a certain class and action taken if the client consistently missed classes with no excuse, such as is done if the client consistently misses therapy with no excuse.

Other appointments of a non-urgent nature were often scheduled for clients during class time, even though the day of the week and the time was the same every week; and all Medical Services staff and instructors were sent class schedules. This caused the client to either miss class or necessitated changing appointments to another time.

The major problem encountered with the family education program was low attendance. It was noted that most of the family members who attended the two-day programs were those who had been to the Center and received some teaching previously. Obviously, these families were interested in, concerned about, and supportive of their injured family member. Many families who had not been to the Center and who knew very little about spinal cord injury did not come to the two-day programs. This is not to say that those who did attend derived no benefit; they indicated they learned a great deal. However, those who were less motivated and less interested were perhaps more in need of education and did not take advantage of the opportunity. All families who were invited and failed to attend the first family education program were invited to the second program.

The planning and implementation of a two-day seminar with regard to selecting the topics, the time schedule, the speakers, the video equipment, housing, food, and registration, not to mention the effort involved in seeing that the program ran smoothly was very stress-producing and time consuming. To do this sort of program on a regular basis and to include other disabilities would require utilizing a team of staff or a committee who has the time and resources available to coordinate and implement this type of educational effort on an ongoing basis. It appeared that all staff saw the need for this kind of program and feel it should be ongoing.

If regular family education programs are established, these should be written into the rehabilitation program prior to admission with an explanation regarding the necessity for attendance and the benefits to be derived. It should be reinforced following the admission to the Center by the counselor and pertinent medical staff. It should be a requirement that families of principal caretakers come to the Center for either individual instruction or the family education programs and preferably both for those clients whose disabilities will require help with their care after discharge. This should be agreed to prior to admission, if possible.

Another possible cause of low family attendance was that the family education programs were held during the week when many people are working. Weekend seminars were discussed and the idea rejected due to many non-SCI Project staff and speakers being unable or unwilling to work on the weekends. All non-WVRC speakers donated their time and provided their own transportation to be a part of the program. Requests to do this on their weekends off would probably not be viewed very favorably. It is recommended that the seminars continue to be held during the week, since it appeared that those families who really wanted to attend managed to do so.

The occupational therapist was involved in the initial planning of the content structure of the weekly SCI client education classes. Client attendance was optional, but clients were strongly urged to attend. The SCI Project occupational therapist attended the classes for the first year and provided feedback to the SCI Project staff. She served as a facilitator for client discussion following presentations. One-on-one discussions between the occupational therapist and client were often held in the O. T. Department or in the hallways.

The following is a summary of classes taught by the SCI Project occupational therapist:

Wheelchair Maintenance

The clients were given comprehensive training in wheelchair use and maintenance. Wheelchair parts were identified and defined to enable the client to more accurately describe to the family and others the use of their wheelchair. Because the Agency often orders wheelchairs from the Invacare and Everest & Jennings companies, their differences and similarities were reviewed. Since in-state vendors for wheelchair parts are few and the Agency serves clients statewide, the client must be knowledgeable about wheelchair part nomenclature to facilitate repair part ordering by telephone. Replacement costs of parts were discussed to emphasize to the client the expense of maintaining a wheelchair. A hand-out (updated annually) was available for clients which listed authorized vendors for wheelchair service in West Virginia. Routine maintenance was discussed as recommended by the two major manufacturers.

In one class, a wheelchair was completely disassembled and maintenance procedures demonstrated. It was well attended (24 clients), but some participants were seated too far away from the work site to see adequately.

Recommendations

When the wheelchair maintenance class is offered, it should be limited to approximately 10 participants each if it is offered in a laboratory setting which is very informative. If offered monthly, all interested would have an opportunity to attend, and groups could be kept small.

Orthotic Aids Maintenance

Orthotic aids maintenance was reviewed covering temporary plastic splinting, metal bracing, care of orthotic collars, back supports, ace bandaging, etc. Because many of the Agency clients are from exceedingly rural areas, they have limited or no access to a convenient source of professional maintenance and repair of orthotic aids.

Recommendations

This type of instruction should be enhanced because often the use of equipment and aids will allow the clients greater vocational functioning. Without adequate aids, functional abilities often diminish because of disuse.

Self-Care/Activities of Daily Living (ADL)

To enhance the lectures on self-care, the occupational therapist used three films which are maintained in the O. T. Department, showing two quadriplegics of different levels and functional abilities completing bathing, hygiene skills, bowel and bladder programs, and self-dressing. To supplement the films, various adaptive equipment was demonstrated. Because replacement of highly individualized adaptive equipment is difficult in this rural state, emphasis was placed on using common and readily available products; e.g., built-up handles can be made by using bicycle handle bar grips, dowel rods, etc. All clients were given addresses of commonly used vendors for adaptive equipment. It was stressed that client reimbursement by third party payers usually requires a physician's prescription.

Recommendations

Classes for the clients should be continued, but broadened in scope, to include the problems of other disability groups. Self-care education for the spinal cord injured should also include participants with spinal cord damage other than traumatic onset; e.g., spina bifida, tumors, etc. Because the functional abilities of the paraplegic and quadriplegic differ vastly from other disability groups, e.g., CVA and arthritic, specific classes should be held with a particular disability population identified. Congenital and childhood disabilities would also have different considerations for client education classes.

CHAPTER 10

ACHIEVEMENTS IN RELATION TO THE ADDITION OF A CLIENT/FAMILY EDUCATION COMPONENT

The most obvious achievement related to the addition of a client/family education component is the increase in knowledge regarding the effects of spinal cord injury and the care involved. In other words, "What happened and what can be done about it?" Most clients come to WVRC with very little knowledge regarding the anatomy and physiology of the spinal cord and how injury affects it. An example of verbal feedback from former clients regarding the educational component was, "These clients are learning more in three months than I did in five years."

The positive responses received following the family education seminars gives proof of the value received from this type of program. Families seemed to feel less anxious about taking their injured family members home for weekends, holidays, and following discharge after attending an education seminar and after receiving individual instructions.

Several referrals from the field were made that specifically requested participation in the SCI Project, and many of the clients were reentries who benefited from this added feature to their program. They indicated they learned much more during their readmission period by participating in the education classes than they did the first time they were at the Center.

It has been noted by the SCI Project staff that there are fewer complaints regarding care on the Treatment Unit now than in the beginning of the Project. It is felt that this can be attributed partly to the fact that the clients are more knowledgeable and know what their needs are and how to take more responsibility for getting those needs met than just lashing out at staff members. There are fewer urinary tract infections, and the infections that are present are being treated sooner with better follow-up and faster results. Care of equipment has improved. Clients are being started on intermittent catheterization programs soon after admission, and more attention is being paid to fluid intake, voiding techniques, residual urine volumes, and prevention of infection. There is less conflict between the Treatment Unit and the therapies regarding catheterization schedules than in the beginning of the Project. Both units are able to realize the importance of maintaining a regular catheterization schedule vs. emphasis on the departmental schedules as was previously noted. Satisfactory compromises are being worked out.

Very few clients are being admitted with pressure sores now; and this can possibly be attributed, in part, to the SCI Project nurse's intervention with field counselors, family members, and the admissions committee. Also, it is noted that hospitals are doing a better job in preventing sores. Very few sores occur on the Treatment Unit at this time, due to increased client awareness or preventive measures and increased staff alertness. Those that do occur are generally caused by client neglect or family neglect while the client is home for a visit. The routine for caring for them is more consistent now due to the physiatrist's intervention. There is very little conflict regarding sitting time, dressing changes, etc., between the Treatment Unit, therapies, and various physicians, as was present at the beginning of the SCI Project.

There seem to be fewer hospitalizations following discharge than there were in the past though this cannot be documented. However, the post-Project questionnaire and follow-up phone calls revealed post-discharge hospitalizations occurred with approximately 14 per cent of the total 133 clients on the SCI Project master list. The percentage of those hospitalized after termination in the years prior to the SCI Project was not researched; but, in reading through old files for the three years prior to the Project, it was noted that there were many more intercurrent illnesses that required hospitalization during the time the person was a WVRC client. Many of the clients who were readmitted to WVRC had been in the hospital one or more times prior to readmission.

Another less measurable advantage of the client/family education program was the involvement of various staff members. It was found that there was more interest in the overall welfare and education of the SCI client and his family when staff members from all areas of expertise were included in the education process. If one has to teach others, one tends to learn more about the subject and, once having taught it, is anxious to see the results of teaching. Many comments were noted to the effect that staff saw a need for the same type of education for other disabilities due to the success of the education program for the SCI clients. Various staff members also attended the education classes and thus learned more about this particular disability which, hopefully, enhanced their skills in working with this type of client.

Problems/Recommendations

Many of the problems encountered with implementing and continuing an education program have been discussed in other sections of this report.

The most frustrating aspect of an education program in this kind of setting was the lack of follow-up with regard to the results of teaching. The nurse had no way of knowing if what was taught was learned, retained, and used after the client left the Center unless she made numerous telephone calls every week. Also, the end results of teaching and training may not become evident for months or years in this type of client, and benefits in terms of positive reinforcement to the nurse for her efforts were minimal. In an acute care setting, the results of a nurse's care and teaching are readily evident. In a nursing school setting, the results of teaching are readily observable in the students' test results, clinical experiences, and personal growth. The opposite is true in a rehabilitation setting where progress is slow and the results of teaching are often not observable until the client returns to his home community, and the nurse cannot see those results from her work setting. Somehow, the nurse would like to see follow-up reports on terminated clients make their way back to the Center to be used in evaluating our effectiveness, in helping to make necessary changes, and in planning education programs for future clients.

Another problem encountered was that of field counselors attempting to send either new clients or former clients to the Center specifically for SCI Project services. It had to be explained several times that every client went through the regular Center admission procedures and could not be admitted solely because "the client did not receive SCI classes, group, etc. during their initial WVRC admission." The District Supervisors also had to be made aware of this, so they would not approve cases solely for SCI Project services. In some instances, there was hostility toward the Center for requiring that the client must have need of other Center services in addition to SCI education before being approved for admission. In these cases, the SCI Project grant proposal was mailed to these districts. In other cases, SCI Project services were not included in the initial plan from the field, and this had to be explained to the client and written into their Center program by the Center counselor. In some cases, this caused resentment from some clients who said no one told them they had to go to class and that they just came here for therapy.

These problems gradually were eliminated as the SCI Project staff took every opportunity to talk to field staff, lead pre-admission tours, and generally "spread the word" regarding SCI Project services. This type of communication should continue with regard to Center services in general, and field staff should impart accurate information to their clients.

CHAPTER 11

TREATMENT UNIT STAFF PROVIDING ATTENDANT CARE

Prior to the beginning of the SCI Project, substantial delays were encountered in being able to admit SCI clients to the Center's Treatment Unit. WVRC has historically experienced a shortage and high turnover rate of nursing assistants (aides/orderlies) who are the primary providers of attendant care services for our Treatment Unit residents.

Discussed elsewhere in this report are the disincentives to this type of work - low pay, undesirable job tasks, verbal abuse from clients, etc. It was hypothesized in the original grant proposal that in-service education and training for these employees would help to promote job satisfaction and retention.

The chapters dealing with client education programs and staff development activities document the fact that in-service programs were made available and utilized by these employees. Also noted was the work which our psychiatric consultant did with these employees.

However, these efforts did not significantly alter the turnover rate of these employees. The WVRC Assistant Administrator of Medical Services and the Director of Nurses concur that in 98 per cent of the cases involving nursing assistants' resignations, two reasons are given. The employee states that he/she is leaving for a better paying job or to return to college on a full-time basis.

Therefore, this was apparently an invalid hypothesis. Nevertheless, these programs should be continued as a means of enhancing the quality of client care.

With the current national and international recession, West Virginia has one of the highest unemployment rates in the United States. This has resulted in an increased number of applicants for Treatment Unit nursing assistant vacancies. Current WVRC staff shortages are now seen among nurses, occupational therapists, and physical therapists because of the non-competitive salaries paid by the state under its Civil Service System.

In spite of fluctuating patterns of staff shortages, there is currently no delay experienced in admitting eligible clients to the WVRC Treatment Unit. There is no current backlog of clients awaiting admission. Contributing factors have been decreased lengths of stay, a decline in intercurrent illnesses, and a decline in referrals.

CHAPTER 12

SCI APARTMENT

During the second quarter of the SCI Project, permission was granted to utilize an apartment in the P & P Building to house family members of spinal cord injured clients. This allowed the families to come to WVRC to learn attendant care skills, coping skills, and other aspects of spinal cord injury. In most cases, the client stayed with the family in the apartment unless he was medically unable to leave the Treatment Unit. A direct telephone line to the Treatment Unit was available in case any help was needed. The SCI Project nurse was responsible for reservations, screening clients and families, notifying pertinent personnel of occupancy, and dealing with any problems.

About the time utilization of the apartment was at a high level, the State Office took the apartment for office space; and the SCI Project staff had to begin looking and arranging for a new site for an apartment. We had some furniture and kitchen equipment supplied to us when the Spencer State Hospital Rehabilitation Unit closed. In addition to being displaced from the P & P Building, the major kitchen appliances, as well as some furniture, were retained by the P & P staff. Eventually, we were provided an area adjacent to the Speech & Hearing Department for another apartment. The bathroom is located outside the apartment and has separate rooms for the shower and commode which is a disadvantage, but they are accessible. A new kitchen had to be built and kitchen appliances and some furniture obtained. New drapes were ordered and put up. With the expert help of the housekeeping instructor and her students, it was equipped and is excellently maintained by them. The Speech & Hearing Department uses the area during the day for some of their group therapy work; but, so far, no scheduling conflict has occurred. No major problems with clients and their families have been reported. A direct phone line to the Treatment Unit was also installed.

In order to justify the amount of use the apartment had, it was decided to maintain a list of occupants. As can be seen by the following lists, it has been utilized by a variety of disabled people.

Following the termination of the SCI Project, the apartment was turned over to the Occupational Therapy Department to be used by all disabled clients and families who need the training and practice in independent living skills and re-establishment of family roles. It has proven especially useful in the area of allowing a family and a client to feel competent enough to try a weekend at home for those who had not been home since their injury. It is recommended that it continue to be used for these purposes, plus any others for which the O. T. Department feels there is need. This apartment is an excellent training area in independent living skills, as well as a place for families to stay and learn together.

SCI APARTMENT SCHEDUELE - 1981

April 8, 9, 1981	SCI client and wife
May 29, 30, 31, 1981	SCI client, wife, two children
June 12, 13, 14, 1981	SCI client, parents, sister
June 5, 6, 7, 1981	W. Va. Miss Wheelchair Pageant
June 25, 30, 1981	SCI client and wife
July 12 - 31, 1981	Cleft Palate Clinic (Days only)
July 14, 15, 16, 24, 25, 31, & August 1, 14, 15, 16, 21, 21, 1981	SCI client and wife
August 28, 29, 1981	SCI client and family
September 4, 5, 6, 1981	SCI client and wife
September 9, 10, 1981	SCI client and family
September 18, 19, 1981	SCI guest speaker
October 3, 4, 1981	Multiple sclerosis client and family
October 10, 11, 1981	Non-SCI client and family
October 16, 17, 1981	SCI client and family
November 1, 2, 1981	Non-SCI client and family
November 13, 14, 15, 1981	Non-SCI client and family
November 16, 17, 1981	SCI client and family
December 4, 5, 6, 1981	SCI client and family
December 11, 12, 1981	SCI client and family

SCI APARTMENT SCHEDULE - 1982

January 8, 9, 1982	SCI client and family
January 15, 16, 1982	SCI client and family
January 22, 23, 1982	SCI client and family
January 29, 30, 1982	SCI client and family
February 15, 1982	SCI person/WVRC volunteer
February 26, 27, 1982	Family of SCI person
March 5, 6, 1982	SCI client and family
March 12, 13, 1982	Non-traumatic SCI person and family
March 27, 28, 1982	Non-traumatic SCI person and family
April 3, 4, 5, 6, 1982	SCI client and family
April 16, 17, 18, 1982	Muscular dystrophy client and family
May 6, 7, 1982	SCI client and family
May 7, 8, 9, 1982	Muscular dystrophy client and family
May 20, 1982	Non-SCI client and family member
May 28, 29, 1982	Non-SCI client's family
June 4, 5, 6, 1982	Contestants for Miss Wheelchair Pageant
June 17, 1982	Non-SCI client's family
June 18, 19, 20, 21, 1982	Non-SCI client and family
June 24, 1982	SCI client and family
June 25, 1982	Non-SCI client and family
June 27-July 1, 1982	Deaf client and mother
July 12-30, 1982	Cleft Palate Camp (During days)
July 17, 1982	SCI client and family

CHAPTER 13

RECOMMENDATIONS FOR ADAPTIVE EQUIPMENT/ ENVIRONMENTAL MODIFICATIONS: O. T.

The occupational therapist has served as a resource person for various Center staff regarding needed modifications in their units or to assist students in their areas. The O. T. had initially hoped to survey the work area of each SCI client at the Center to review the physical layout and the client's functioning. Because of staff shortages in the O. T. Department, this was impractical to complete. The O. T. did respond to requests for assistance from various Center units or clients.

1. Vocational Evaluation - The O. T. assisted the unit when asked to recommend structural modifications and adaptation of nearby restrooms to accommodate a client who uses a wheelchair or ambulatory aids. The recommended equipment aids (commode seat and grab bars) were installed for client use. Prior to the modifications, a client who used a wheelchair needed to go to another building to use a restoom thus interrupting their program in evaluation for a greater length of time.

The unit also sought recommendations for adaptive aids to assist clients while undergoing evaluation. The O. T. offered the following suggestions and vendor source: lapboard, bookholder, reacher, universal cuff, etc. In the past, these items were borrowed from the O. T. Department as needed thus temporarily depleting the O. T. Department supplies.

2. Sheltered Workshop - The O. T. assisted this unit when requested by completing a task analysis and defining for the supervisor the client's functional abilities. Task and work areas were modified, and recommendations for adaptive equipment were made to enable several clients to complete functional activities.

3. Commercial Training Area - The O. T. assisted the instructor and several clients by recommending modifications of the work area and use of adpative equipment and splinting. One client assisted was a quadriplegic who completed all activities with mouth control. The work area was equipped with a mouth stock holder and secured calculator and paper holder designed and fabricated by the O. T. Client used an extra tall desk with revolving turntable (manual) for his work area. Several mouth devices were fabricated by the O. T. to enhance his functioning. Several clients used hand splints for writing, and these were evaluated regarding their functional use and appropriate recommendations made.

Since many of the SCI quadriplegics are placed in the commercial area for training, it is important that a good working relationship exists between the instructor and the O. T. Department to facilitate the clients functioning at their maximum.

4. SCI Project Staff - The O. T. served as a resource person for recommendations to improve functional use of the two SCI apartments used during the Project

period. Because the apartment was used by clients and their families or friends, an attempt was made to de-institutionalize the environment to assist in the transition between institution and home. The bathroom area was equipped with a shower chair, grab bars, personal shower hose, raised commode, accessible sink, and lowered mirror. The remainder of the living area was equipped with regular home furnishings with the exception of an electric hospital bed in one bedroom.

The O. T. visited the FMC plant in South Charleston to evaluate parking, grounds, work area, and restroom facilities. Management at the plant was very accommodating regarding possible modifications in job tasks and parking requirements. Plant personnel were concerned for the client's safety regarding the possible need of quick evacuation but were impressed at the client's ability to maneuver his wheelchair. Job task and parking recommendations were specified to management.

It was this therapist's opinion that management would have been responsive to the client's returning to work, but actual placement was dependent upon the union. The client did not resume work activities at the plant.

Because of staff shortage in the O. T. Department, the SCI Project O. T. was not able to make on-site work visits outside the Charleston, WV, area. On several occasions, communication was held with field counselors regarding work modifications for Agency SCI clients. The O. T. often recommended that a representative from the Structural Barriers unit of the Agency make on-site job visits. This approach was not ideal because the Structural Barriers unit representative did not fully understand the clients' functional work abilities.

Recommendations

It is the O.T.'s opinion that DVR will need to continually work with various unions regarding placement of disabled individuals and use a representative of the O. T. Department for on-site visits whenever possible.

This therapist served as a resource for numerous Center clients regarding wheelchair repairs, ordering replacement wheelchair parts, and various other supplies. The clients seemed appreciative to know that there was someone specific they could go to when problems arose.

Any individuals who use wheelchairs and/or adaptive equipment should be informed of the O. T. Department as a Center resource for repairs and ordering wheelchair parts. Often when wheelchair repair and maintenance is made in a timely manner, the ordering of parts can be alleviated or postponed and not compromise client safety.

The O. T. served as a resource for field counselors and non-Agency persons when questions existed regarding equipment and modifications. On numerous occasions, DVR field staff would consult with the O. T. regarding new problems of former Agency clients requesting ideas or solutions. It is recommended that this consultation service be continued.

CHAPTER 14

PSYCHOLOGICAL SERVICES

As a staff member new to the W. Va. Rehabilitation Center, being employed only at the start of the SCI Project, this writer was quite impressed with the tremendous amount of Agency support for the SCI Project. This support from all levels of the Division of Vocational Rehabilitation was instrumental in making the SCI Project quite successful. In any program such as the SCI Project, there are factors which are beyond the control of the Project staff which impact on the program. It is felt that any narrative describing the experiences of the SCI Project should make mention of some of these factors.

Shortly after this staff member became affiliated with the Agency, the Agency saw its Director retiring and a new Director appointed. Both Directors, it should be pointed out, were quite supportive of the SCI Project. The Agency then went through a reorganizational process; however, this did not alter any objectives as set forth in the original grant proposal. At the WVRC, there was also a change in administration in that the Center Administrator retired and a new Center Administrator was appointed. After the appointment of a new Center Administrator, the WVRC also went through a reorganizational phase.

During the SCI Project period, a freeze in state government spending was also experienced. Also, the SCI Project, due to federal policy changes, lost its I & E funds. The Division of Vocational Rehabilitation, however, was committed to the SCI Project and continued its support. During the freeze in spending in state government, there was also a reduction in force which did not allow for the replacement of some staff who had either retired or resigned. It is felt that his affected several departments and did not perhaps allow us to utilize some of these departments to their fullest in that they were somewhat short of manpower.

The goals and objectives of the SCI Project are outlined in the original grant proposal and will not be reiterated in this section. It is this writer's opinion that a great deal of latitude in implementing this Project was allowed Project staff; and, as mentioned previously, there was a tremendous amount of Agency support for the Project. Center staff, in general, were quite supportive; and their input and assistance were solicited in implementing the SCI program. As indicated in the original grant proposal, it would have been impossible for the Project staff to implement such a program without the assistance and support of the various departments throughout the Center. Also, as reflected in the original proposal, many of the program elements undertaken by Project staff had Centerwide implications; and the findings of the SCI Project would be utilized to help bring about change in procedures, services, and programs at WVRC.

In the original grant proposal, program objectives were outlined; and, to achieve these objectives, there were various job duties assigned to the staff members of the SCI Project. In this final report, the present writer will utilize the job duties as assigned to indicate how each job duty was carried out, accomplishments (if any), problems encountered, and recommendations for further program planning.

As outlined in the original grant proposal, the position of psychologist was assigned the following duties:

1. Carry a Project client caseload of all Project clients.

The Project psychologist was given a great deal of latitude in implementing psychological services for the SCI clients. In developing a program of psychological services, it was kept in mind that these services would be provided in a vocational rehabilitation setting; and, as such, vocational outcome was of high priority. The approach to psychological services was somewhat eclectic; however, philosophically, a client centered approach in working with clients was utilized. Along with this line of thinking, a program was planned which would utilize the strengths of various clients with cord injuries. Throughout the program period, a concerted effort was made to build into the program a strong student input. It was felt that in order to utilize the strengths of the clients and to promote the idea of each individual helping their peers, an attempt was made to build group cohesion within the SCI Project students. To do this, various changes were implemented that would help bring this about. For example, when the Project started, it appeared to this writer that students were not encouraged to do much interacting with each other. It seemed that students on the Treatment Unit would go to bed rather early each evening and not do much as far as talking to each other. In working with the Treatment Unit staff, who were most cooperative, arrangements were made so that students could stay up to a later hour, if their physical condition allowed; and they were encouraged to visit each other in their rooms. A great deal of informal discussion seemingly ensued, and it was observed that several students would be seen together discussing issues surrounding spinal cord injuries. It was felt that many times the information that students obtained from each other in these informal sessions was quite beneficial in their rehabilitation programs.

One problem in carrying out the job duties of carrying a Project caseload of all Project clients was that which was cited in a report submitted in December of 1980, which was an 18-month review of the SCI Project. In this document, it was pointed out that "In those cases where the counselor is carrying primary responsibility for the counseling of these clients, the Project psychologist's role is more of a backup one rather than providing active therapy with these clients. The primary responsibility for the client is seemingly defined by the Center as resting with the counselor." Further on in this report, the following was offered: "As outlined in the original proposal, it is stated that services of the SCI Project at WVRC will include overall coordination of a comprehensive rehabilitation program to assure the timely delivery of services to meet individual client needs. It is felt that the responsibility of the SCI Project staff in relation to the other staff at WVRC has not been delineated, and the need for clarifications exists." This conflict, which led to some confusion and in part resulted in an inability to carry out the first job duty of the Project psychologist, has to date not been totally resolved. The problems this [illegible] are not insurmountable; however, if the Agency is to have similar types of programs as the SCI Project, it is an area that perhaps should be given some attention.

In summary, the above job duty was fairly well met. A brief description of the type of psychological services offered has been offered. It should also be mentioned that psychological services in a vocational rehabilitation setting are probably somewhat different than psychological services in other settings. The difference is that the goals and objectives of the Division of Vocational Rehabilitation, which are vocations, must be of utmost importance. It is also felt that an important accomplishment of the SCI Project was to implement a program which emphasized and utilized the strengths of the clients utilizing Project services.

2. The psychologist will consult with family members and the client (during the first phase of the family education program for spinal cord injured) the psychological aspects and adjustment factors of the disability.

This job duty was carried out in two ways. With those families who attended the family education seminars, a session of this seminar was devoted to psychological aspects and adjustment to disability. The role of the family in the rehabilitation process was also discussed. There was also time built into the sessions for allowing family members to talk with each other and share their feelings. As the evaluations of these family education sessions indicate, the families that participated seemingly obtained a great deal from these sessions and seemingly had a very good understanding of the psychological aspects of spinal cord injury. The second way in which this job duty was carried out was that families were encouraged to come to the Center with the client to tour the WVRC. During these tours, time was made available to talk to both family and client about their Center program, as well as any feelings they might have.

There was some problem in this endeavor in that we provide services to clients with spinal cord injuries from the entire state of West Virginia. In many cases, work schedules and distance to the Center may have hindered some families from participating in this program element.

In concluding, it was emphasized with all families with which we were able to meet that it appeared that family involvement is quite conducive to a favorable vocational rehabilitation outcome. It is hoped that this program element could continue and perhaps be conducted from the District Offices at a future date.

3. The psychologist will conduct psychodiagnostic testing.

This job duty was the cause of a great deal of concern of the SCI Project psychologist. It is felt that psychological testing can be beneficial in helping establish a program for an individual; however, routine psychological evaluations without direction or requests for specific information do not seem desirable by this writer. It appeared to this writer that the extent of testing would depend upon the needs of the individual client, as well as specific questions from the referral source which need to be addressed. Also, it is felt that psychological testing may be unnecessary when the same answers can be obtained in a 15-minute discussion with the client. For example, it would seem that the utilization of projective testing to determine depression may not be needed if the client is quite willing to discuss his depression and is more than willing to describe his feelings. It was strongly felt that psychological testing should not replace working with clients on a day to day basis. It was also noted that many of the clients with spinal cord injuries changed over a period of time and that testing upon entry with little follow-up and monitoring on a day to day basis would have missed the many changes in these individuals. For example, generally upon entry into the WVRC from a general hospital setting, clients were not experiencing a great deal of depression. They seemed to be looking forward to their physical restoration program. It was not uncommon as their program progressed and as they tended to "peak out" in their physical restoration program that depression then became evident as they then started to deal with the many issues surrounding their injury. For this reason, it was felt that a dynamic approach to programming for those individuals with spinal cord injury was a much better plan than a static one-time evaluation. It, again, should be restated that psychological testing has some value in working with the cord injured. For example, if a person is to enter certain occupations, intellectual evaluations may be helpful to see if the individual has those attributes which are generally associated with successful performance in a training program for that particular occupation. Another area which was extremely helpful to the client was that of interest testing. It is not at all uncommon to find that persons coming to the Center with spinal cord injuries had been employed in certain occupations; but, due to the nature of their disability, they would probably not reenter that occupation. It was helpful to the students, it is felt, to have information available for them to see other areas in which they might be interested.

There were other considerations in testing which this writer feels are important in working with SCI clients. One such concern is the determination of the appropriate time to test those individuals coming to the Center with SCI. Although this depends a great deal on the individual, many times it was felt that early in a person's program the individual is more concerned with the physical restoration program and was at that particular time still somewhat in the denial stage in dealing with the traumatic injury. In working on a day to day basis with this individual, this was fairly easily assessed. Also, depression seemed to be a problem with many individuals with a spinal cord injury. This, of course, is not true in every case; however, in those cases where depression was significant, it is felt that this may lead to somewhat of a depressed score on their intellectual evaluations. Other factors which may have had a detrimental effect on their optimal performance on psychological evaluations, in addition to depression, were medications, lack of balance in upper extremity movement due to body casts, and the various psychological reactions that were found with this population. In addition to these considerations, the problem of applicability of many standard instruments for the quadriplegic was also a concern. In many cases, partial testing was all that could be completed. In some instances, especially with some of the achievement tests, this writer is particularly concerned as to the validity of these instruments in that appropriate norms did not seem to be available.

In summary, although testing was done with the students in the SCI Project, there were various concerns by this writer about testing with this population. It was felt that testing was helpful in certain cases; however, routine non-specific evaluations are felt to be a procedure that is less than desirable.

4. Conduct group counseling sessions.

Group sessions have been an ongoing component to the SCI Project since its inception. We originally started with the help of the therapy counselors and the psychologist, however, counselors had other duties at a later date and discontinued their participation. Groups are now conducted with the psychologist and occupational therapist. When the census at the Rehabilitation Center was high, there were times when there were two groups being held with those people who had spinal cord injuries. One group was held for those persons just entering the Center, and another group was held for those who had been at the Center for a longer period of time and seemingly were working on different types of interests and adjustments. The groups were unstructured in that there were no set topics for discussion. Topics were selected by the group as to issues in which they were interested.

5. Engage in family counseling between husband and wife and children as needed.

As mentioned previously, this component of the program was hampered somewhat by work schedules of families, as well as the distances to the Center. In some cases, this component was carried out when families came to the Center to visit and were part of the family education component. It is felt that this is a component of the SCI Project that is important. However, due to limited family contact, this program element was difficult to complete. This perhaps is a component that may best be carried on in the District Offices, as well as having sessions when the family comes to the Center to visit the client.

6. Assist Center counselor in individual counseling (direction) if needed.

Depending on counselor needs, this was carried out on a day to day basis. There was some direction given in some psychological evaluations and also in informal meetings with various counseling staff.

7. Attend staffings.

Staffing has been an exciting development at WVRC since the inception of the SCI Project. Medical Services at WVRC previously held staffings in a large group without the client being in attendance. A new approach, that of assigning clients to a specific small team of WVRC staff, has been implemented. The SCI Project staff was part of all group staffings of SCI clients. The client is also part of this group and was instrumental in developing his own rehabilitation plan. It is felt that this has been very beneficial and quite motivating to the individual client. In a report of 3/31/80, a description of these staffings was provided. The following is taken from that report: "The Project staff provided a prototype approach to medical/vocational staffings. These staffings included the Project staff members, the client, the client's family members, the client's counselor (Center or field), and other appropriate Center discipline members."

To develop a rehabilitation plan which would focus on the areas of vocational, interpersonal relationships, and recreational skills, a team was drawn from the various departments at WVRC. Departments represented included recreation, education, speech & hearing, vocational evaluation, occupational therapy, physical therapy, along with the rehabilitation counselor, SCI Project nurse, SCI Project psychologist, and Medical Director. The goal of this team was to have the individuals representing the various departments evaluate the client to determine strengths and weaknesses and to formulate their impressions in order to share the information with the client. At the end of the one-week evaluation period, a rehabilitation team, including the client, again met and a rehabilitation plan was established. This procedure is different from that utilized by the WVRC in working with the spinal cord injured clients in the past. It differs in the following ways:

(a) The focus was on the total individual and not solely on physical restoration.

(b) Vocational objectives, although they may change during the person's program, are emphasized during the early stages of the rehabilitation program.

(c) A team approach which is utilized stresses the interaction of all departments working on mutually agreed upon objectives.

(d) The client is directly involved in establishing his own rehabilitation program with the various departments providing professional assistance to the client. The client participates in the staff meetings and is, in fact, designated as the planning coordinator of the team.

When a vocational rehabilitation plan is agreed upon by all present at the planning sessions, a follow-up team meeting is held to determine progress and changes in the program if necessary.

Previous to this format, the client did not participate in the staffings. This approach also resulted in a small group of professional staff working with an individual client in planning his rehabilitation program.

A small team approach has been adopted by the rest of the Medical Services staff. Many benefits have been derived by this staffing technique. In spite of the additional time needed to conduct the staffings, the client input and the end result more than offset the extra staff time investment.

Although the team staffings were seemingly quite successful, as of our June 1982 report, it was indicated that there was some difficulty with the team staffings. Numerous meetings were held surrounding some of the issues of team staffings. However, from this writer's point of view, team staffings have not recovered to the extent that they are as productive as they once were. It is felt that additional time, effort, and discussion will be needed in order to make team staffings again functional if this continues to be a priority with the staff and administration.

8. Hold periodic family conferences.

This, as mentioned above, was a job duty that was somewhat hampered due to the distances families had to travel, as well as work schedules and other difficulties for families coming to the Center. As mentioned previously, many family conferences were held in conjunction with the family education programs at the Center, as well as meeting with families when the person with the spinal cord injury was admitted to WVRC. It is felt this is a very important part of a program for the person with SCI. However, availability of families for this service is a difficulty encountered.

9. May serve on WVRC acceptance and review committee (admissions committee).

For the duration of the SCI Project, limited requests for the SCI psychologist's input have been received.

10. Advise nursing, physical therapy, occupational therapy, houseparent staff, and Center counselors regarding psychological approaches on modifying behavior patterns as needed.

This element of the psychologist's position required a great deal of time. It was done on a continuing basis and was done nearly daily. Since we moved to a team approach rather than a psychologist advising, the psychologist has become a member of a team where discussion of problems is accomplished. Input by the psychologist as a team member is made. The team then decides the best approach in handling problems as they arise.

11. Assist staff in understanding client family dynamics involved between various family members.

This was done on a case by case basis. However, as previously mentioned, family involvement in the program, due to previously cited factors, was not as great as it should have been.

12. Assist with vocational involvement.

This job duty required a great deal of time and study by the Project psychologist. As well as talking to students about the vocational component to the program and doing interest testing, a great deal of time was spent in looking at things such as vocational evaluation and job development. Mention of these concerns was made in several previous reports. In a report covering 7/1/79 through 3/31/80, the following was reported: "The Project psychologist has invested a great deal of time reviewing literature in the area of evaluation and job development procedures. A copy of the final report of the George Washington University Project was obtained and reviewed. A meeting was held with members of our State Office staff, and job analysis was discussed. The Project psychologist attended two training sessions in Morgantown, WV, sponsored and conducted by the W. Va. Division of Vocational Rehabilitation, focusing on the subject of job analysis and job placement. The primary focus has been in the areas of job development for the severely disabled, as well as developing appropriate techniques to evaluate this population. Mr. Henderson also attended a meeting at George Washington University on research utilization. He felt that this program was beneficial in that utilization research resources were located, particularly as they pertain to spinal cord injury. Mr. Henderson also made a field visit to the job development laboratory at George Washington University. Mr. Mallik spent a great deal of time explaining the project and the procedures they use in developing jobs for the severely disabled. A great deal was learned on this field trip, and such an approach will hopefully be developed within the West Virginia Rehabilitation Center."

In another report of 9/30/80, the following was mentioned: "The Project psychologist's major area of concern is still that of vocational evaluation and possible job placement for the severely disabled. No great strides have been made, however, this is still a form of concern to the Project psychologist; and continued effort will be made in this area."

In a later report of March 1981, the following was also stated: "As mentioned in previous reports, an evaluation of the severely disabled, especially the spinal cord injured, continues to be a concern of the SCI Project psychologist. Since we are a vocational rehabilitation center, our main focus should be vocational rehabilitation."

In a report of December 1981, progress was noted in the area of vocational evaluation when the following statement was made: "Effective January 1982, a work evaluator will become a member of the teams working with those spinal cord injured students enrolled in a physical restoration program. Increased emphasis will be placed on input from the field staff as vocational planning progresses."

In summary, a concern of the Project psychologist has been the area of appropriateness of vocational evaluation to the severely disabled and also what appears to be a great need in the area of job development for placement of the severely disabled. It is felt that a great deal of work is still to be done in this area.

CHAPTER 15

OCCUPATIONAL THERAPY SERVICES

The vast majority of the SCI Project's occupational therapist's time was spent delivering direct client services. From the initial Project date of July 1979 to December 1982, the WVRC Occupational Therapy Department periodically suffered a severe shortage of therapists. Initially, the WVRC O. T. Department was staffed by three licensed therapists and the Project therapist. The O. T. Department was served by four therapists from July of 1979 to October of 1979, by three therapists from November of 1979 to April of 1980, by two therapists from May of 1980 to June of 1980, by three therapists from July of 1980 to November of 1980, two therapists from December 1980 to November of 1981, three therapists in December of 1981, and four therapists from January of 1982 to July of 1982. During two and one-half months in 1982, the O. T. Department Chief was absent on medical leave, and the Project therapist assumed the Chief's administrative and clinical education duties, in addition to providing direct client treatment.

The Chief of the O. T. Department made all client assignments to the staff therapists and Project therapist for direct client treatment. When staff allowed, the Project O. T. served only spinal cord injured clients; but, during periods of shortage, she was assigned clients with other disabilities.

The Project O. T. served 38 quadriplegic and 20 paraplegic clients with comprehensive services (evaluations, establishment of goals, development of treatment plans, fabrication of adaptive or special equipment and supplies, recommendation for equipment and supplies for purchase, treatment techniques provided in accordance with treatment plan, ongoing re-evaluation and modifications of goals, treatment plans and techniques, and termination planning).

During the Project period, the O. T. Department was a field work placement center for occupational therapy students from various O. T. education programs. The Project O. T. served as a resource person and instructor regarding treatment and precautions for SCI individuals. The Project O. T. served as a resource person for staff therapists regarding direct client services.

Recommendations

In order to facilitate client function, the facility should keep a stock of frequently ordered adaptive equipment to be issued to clients for their use while at WVRC. With the present ordering system, clients must wait two to three months or more for adaptive equipment once it has been recommended. The O. T. Department at WVRC has tried to maintain stock for some items, but storage is inadequate and no adequate charging system to the client's case has been established. The Chief of O. T. completed the administrative procedure necessary to charge clients for wood items fabricated in this department: sliding boards, lap boards, wheelchair seat boards, cutting boards, and pan holders. The clients will be made aware of the unit cost of each item. Because medical related adaptive equipment is expensive and often difficult to replace, all personnel must try to be cognizant of this fact when ordering. Often clients have said that they want the very best because they are not paying for it without realizing what replacement costs will be in the future.

The O. T. recommended the use of the uniform occupational therapy evaluation checklist to the Chief of the O. T. Department which was accepted. Utilization of this tool will provide a consistent format for all O. T. evaluations by WVRC's occupational therapists.

The Project O. T. participated in the SCI group meetings held once a week for one and one-half hours each. The groups were initially led by the psychologist, one or two counselors, and the occupational therapist. For the last year of the SCI Project, group has been led by the occupational therapist and the psychologist. The O. T.'s involvement in the group was two fold: (1) group leader and (2) consumer. Because the O. T.'s husband is a paraplegic, she was able to relate to problem areas when the discussion arose in the group. She was also able to respond to the feelings and frustration of a spouse of someone who uses a wheelchair.

The group meetings should be continued but client population enlarged to possibly include amputees, blind, burns, and other non-traumatic brain injury clients. The Center offers a reality orientation and discussion group for the traumatic brain injured for one-half hour each morning Monday through Friday.

A mechanism must be established to reflect a treatment cost to the client's case for clients attending groups. A referral procedure must be developed to acquire new members into the group.

CHAPTER 16

DISCHARGE PLANNING AND FOLLOW ALONG TO ASSURE CONTINUITY OF POST-WVRC MEDICAL SERVICES

The SCI Project nurse, along with the Treatment Unit staff, did discharge planning with regard to health care on all SCI Project clients. She believed in beginning discharge planning early on in the client's program and made an effort to relate all teaching and procedures to life at home instead of in the Center. She tried to instruct all clients and families on cost-cutting measures and supported the SCI Project's occupational therapist with regard to purchasing and using only necessary equipment and supplies needed to function. She made arrangements for follow-up care with Public Health Departments and physicians and discussed home care with as many families as possible. She helped make arragnements for care during times of WVRC holiday closings in order to help minimize health problems that could occur when the client left the Center. She frequently sent nursing discharge summaries and nursing referrals to the appropriate health care providers to help assure continuity of care. She was particularly insistent on the client obtaining urological follow-up and stressed this to every client.

She made arrangements for former Charleston Area Medical Center/General Division patients to attend the SCI clinic held monthly at CAMC/General Division. She coordinated her efforts with the ADL nurse at CAMC/General making sure lab and x-ray reports were ready, transportation arranged, and all pertinent personnel notified. She encouraged those clients attending this clinic to continue to utilize this service following discharge if possible. She made arrangements for SCI clients to continue seeing Dr. McClellan, the Center urological consultant, if they so desired; and, though he takes a limited number of new patients, he would readily continue to see rehabilitation clients following discharge from the Center.

Lists of suppliers, pharmacies, and public health offices were available to the clients in the O. T. library; and clients were urged to make arrangements for supplies, treatment, etc., prior to leaving the Center and not waiting until they left. A supply list was given to clients to help them with purchasing the proper supplies. This list was also utilized by the Welfare Department in determining payment. (A copy of the Supply List form is attached.)

The SCI Project nurse provided post-discharge advice and help to former clients and their families, as well as clients who terminated and then had questions or problems after going home. She also served as a resource person for field staff working with SCI clients regarding health needs. She has kept in touch with many SCI clients during the three years of the Project. She has encouraged all clients to join the W. Va. Mountaineer Chapter of the National Spinal Cord Injury Association and to read and keep abreast of the latest developments, equipment, supplies, medications, etc., in the field of spinal cord injury.

Problems/Recommendations

It was noted by the SCI Project nurse that many of the health problems associated with SCI clients, such as pressure sores, fecal impactions, poor hygiene, and bladder infections occurred while the client was home for weekends or holidays. Therefore, she intensified her teaching with regard to home care and began discharge planning early. Toward the end of the SCI Project, she noted a definite improvement in the overall health status of clients returning to the Center following home visits. She emphasized being able to give verbal instructions for those clients unable to do self-care and not to assume that the care-giver knows what to do. She placed emphasis on the client as teacher/supervisor of his care and recommends that this approach be continued in future teaching of the spinal cord injured. This occasionally caused friction between the client and the care-givers at the Center since the client was sometimes seen as being "bossy" and aggressive regarding his care. Many times, some clients put undue emphasis on personalities or differences in technique of personnel while not following through with what they had been taught regarding their health needs, but these incidences were eventually smoothed over. The benefits of having more knowledgeable clients outweighed the disadvantages of the occasional conflicts.

Problems with lack of family participation and availability have been previously discussed. The main emphasis for teaching was on the client in hopes that he would, in turn, teach his family. However, it was noted in some cases that the client was reluctant to discuss some aspects of his injury, such as bowel and bladder management, with his family and preferred that the staff do it. Occasionally, there was reluctance on the part of some staff to teach clients' significant others (boyfriends or girlfriends) who would be the primary care-givers, if the teaching involved catheterization or bowel care. This was understandable, and no issue was made of this. A staff member who did feel comfortable with this kind of situation was asked to do this, as well as the SCI nurse being available for teaching during the day.

Our current policy is to send clients to the SCI clinic at CAMC/General Division for medical follow-up. The present Medical Director supports this follow along and encourages clients to use these services following WVRC discharge. He and the SCI nurse feel that better follow-up care is provided if the treating physician is aware of his patient's progress and problems while at the Center and can be a part of his medical care plan. It would be ideal if all treating physicians could be more involved with their patients' rehabilitation programs, thus taking more interest in and better care of the client following Center discharge. The SCI nurse would also like to see nursing discharge summaries go to every client's doctor following termination from the Center, since nursing summaries can often be very informative. The SCI nurse has had letters and phone calls from community physicians thanking her for informative referral letters or discharge summaries. This should be done more often.

Assisting and advising dorm clients should continue to be done by all the Medical Services staff and not just the Clinic staff. Since the dorm is a step toward independence and discharge, all help and instructions given are part of the discharge planning. This is not to say that the Treatment Unit staff and others should continue providing day to day care since the dorm client is supposedly able to function independently. However, in the event that they need help at times, this should be provided. It was noted that many former clients continue to call back to the Treatment Unit for help and advice, and this was and is willingly given.

It appears that the Public Health nurses are becoming more knowledgeable regarding care of the spinal cord injured patient, and it was proposed that the SCI nurse do an in-service on spinal cord injury to the Kanawha County Public Helath nurses and, hopefully, then go on to other service areas. However, this did not occur due to lack of follow-up from the Public Health Department.

Currently, there is more physician interaction with clients and families. The physiatrist is very willing to talk with clients and families regarding their Center program, discharge planning, and the care needed.

The SCI nurse recommends that continued emphasis be placed on urological follow-up. The clients should be urged to see a urologist soon after discharge, preferably making an appointment prior to leaving the Center. It is also best if they can obtain services from a urologist knowledgeable in the area of spinal cord injury; but, if this is not possible, the client should be urged to take the initiative in explaining his special needs to the physician. It should be stressed that this is one specialist that they will probably need for the rest of their lives.

It is recommended that more emphasis be placed on explaining to clients that they must receive prescriptions for medication and supplies from their local doctor following discharge from the Center. Many call back wanting prescriptions written or called in for them. Clients receive a limited amount of medication and supplies at the time of Center discharge. Our Center physicians cannot write prescriptions for them once they are no longer clients here. This needs to be stressed to the client prior to leaving, as many have become upset when they are refused this service and feel the doctors here have abandoned them.

The SCI nurse was unable to contact former clients with any consistency or regularity which probably should have been done. Questionnaires were sent out to SCI Project clients regarding Center and Project services, and those responses are included in another section of this report. The SCI nurse found herself so involved with providing services at the Center that she neglected to follow up on many clients after they left the Center regarding their health status. However, many clients did contact her following discharge, and these contacts were all recorded in the SCI Project nurse's files.

SUPPLY LIST

Name: ______________________ Disability: ______________________

Supplies:

CHUX ( ) __________

DULCOLAX SUPPOSITORIES ( ) __________

UNSTERILE GLOVES ( ) __________

FINGER COTTS ( ) __________

K.Y. LUBRICANT ( ) __________

CATHETER IRRIGATION SET ( ) __________

FOLEY CATHETER SET ( ) __________

#_____ FOLEY CATHETER ( ) __________

#_____ FRENCH CATHETER ( ) __________

BEDSIDE DRAINAGE BAG ( ) __________

EXTERNAL COLLECTING DEVICE ( ) __________

ALCOHOL SWAB ( ) __________

COTTON BALLS ( ) __________

DISPOSABLE LEG BAG ( ) __________

PERMANENT LEG BAG ( ) __________

ELASTOPLAST TAPE ( ) __________

SKIN BOND ( ) __________

ISOPROPYL ALCOHOL ( ) __________

ZEPHARIN CHLORIDE ( ) __________

2 x 2's ( ) __________

4 x 4's ( ) __________

ABD's ( ) __________

TAPE ( ) __________

KLING ( ) __________

IODOFORM GAUZE ( ) __________

BETADINE SWAB ( ) __________

HYDROGEN PEROXIDE ( ) __________

Medication:

CHAPTER 17

FOLLOW-UP SURVEY QUESTIONNAIRE

The Project coordinator and staff developed a follow-up survey questionnaire to be mailed to Project clients after their return home. Copies of the cover letter, instruction sheet, and questionnaire are attached.

A 39 per cent response rate has been achieved of those clients contacted to date. Even though the Project has concluded, a second mailing will be done to those clients who have recently left the WVRC.

The responses will continue to be tabulated and shared with appropriate staff. This type of consumer involvement and input is very valuable. A number of the returned questionnaires contained notes requesting help on certain problem areas. Telephone contact was then made by Project staff to the client, family member, field counselor, or other appropriate individuals to assist in resolving the problem.

Several of the notes were written by family members of the SCI client and requested help in regard to the care of the SCI client or how to deal with certain behavioral problems. In every one of these instances, these were the family members who could not or would not come to the WVRC for requested conferences, educational sessions, and hands-on training in SCI care.

Selected items and tabulated responses from the questionnaire are included in this report. The results have been included without detailed discussion or analysis. The identity of the SCI respondents was known to the Project staff since the questionnaires were numbered and keyed to a master list of Project clients. This permitted an individualized analysis of each response. Most certainly some of the criticism and problems cited were valid and efforts have been and are being made to remediate these deficiencies. In other instances, the comments were felt to be invalid based on objective facts which were known and documented about the individual.

STATE BOARD OF VOCATIONAL EDUCATION
DIVISION OF VOCATIONAL REHABILITATION
State Capitol Building Charleston, West Virginia 25305

EARL W. WOLFE
Director

(304) 348-2375

Dear Former Student:

During your stay at the West Virginia Rehabilitation Center, a special program was going on to work with all spinal cord injured students at the Center. The goal of this program is to improve and expand those Center services which are necessary to meet the unique needs of the spinal cord injured person.

Enclosed is a brochure which gives more complete information about the Spinal Cord Injury Project. In addition to the Project's own services, we are concerned with any and all services which a spinal cord injured person may receive while at the Center.

What you have to say about all the services you received at the Center is very important to us. In order to find out your opinions, we have enclosed a questionnaire and a postage paid return envelope.

These same materials are being sent to all spinal cord injured persons who were students at the Center from 7/1/79 to the present date. Your ideas and comments will be of tremendous value to us as we continue our efforts to improve our services.

As you look over and fill out the questionnaire, it is not necessary to write your name on it. We are interested in your comments and not your identity. No names will be used as we total all the comments as to how well or how poorly you think we did.

We would ask that you try to be fair and objective as you write your comments. If you have any questions or concerns about the questionnaire and how your comments will be used, feel free to contact me at the address below.

Thank you in advance for your time and help in providing this information.

Sincerely,

Steve Hill

Steve Hill
Coordinator, Spinal Cord Injury Project
West Virginia Rehabilitation Center
Institute, WV 25112
Telephone 768-8861, Ext. 269

SURVEY QUESTIONNAIRE INSTRUCTION SHEET

The Spinal Cord Injury Project at the West Virginia Rehabilitation Center has a commitment to keep in touch with those spinal cord injured clients who were included in this special program. We will be doing this through direct contact with you and contact with your field counselor.

The efforts of the Spinal Cord Injury Project have been to improve and expand Center services for its spinal cord injured students in order to increase the number who can return to employment.

Enclosed you will find a questionnaire concerning a number of areas. We have included a stamped return envelope and would greatly appreciate having you complete this form and return it to us. Your answers will be kept confidential. This information will be used to evaluate and improve our services.

As you read over the questionnaire, you may discover that some of the questions do not apply to you. For example, some of the Project's services and programs may not have been available before you left the Center. IF THIS HAPPENS, PLACE AN X BESIDE THOSE QUESTIONS WHICH DO NOT APPLY TO YOU.

This is your opportunity to speak up, and we value your opinions. Thank you in advance for taking time to complete this questionnaire.

SURVEY QUESTIONNAIRE

1. Are you employed outside the home ______, inside the home ______, unemployed ______, still in training (or school) ______.

2. If employed, is it full time employment ______ or part time employment ______?

3. What kind of work are you doing?

4. If you have returned to employment, is your income the same, greater, or less than before you received services at the West Virginia Rehabilitation Center?

   Same ______ Greater ______ Less ______

5. What is your average monthly salary before anything (taxes, etc.) is deducted from your paycheck?

Average wages per month

$0-99 __________

$100-199 __________

$200-299 __________

$300-399 __________

$400-499 __________

$500-599 __________

$600-699 __________

$700-799 __________

$800-899 __________

$900-999 __________

$1000-1099 __________

$1100-1199 __________

$1200-1299 __________

$1300-1399 __________

$1400-1499 __________

$1500-1599 __________

$1600-1699 __________

$1700-1799 __________

$1800-1899 __________

$1900-1999 __________

$2000-2099 __________

More than $2100 __________

6. Did you receive vocational training at the West Virginia Rehabilitation Center? Yes______ No______

7. Have you received vocational training since you left the West Virginia Rehabilitation Center? Yes______ No______

8. If you have not received any vocational training to prepare for a job, would you be interested in receiving training? Yes______ No______
   What kind of training?

9. Would you recommend the West Virginia Rehabilitation Center to others with spinal cord injuries? Yes______ No______

10. Please list five (5) positive statements about the West Virginia Rehabilitation Center.
    (a)
    (b)
    (c)
    (d)
    (e)

11. Please list five (5) negative statements about the West Virginia Rehabilitation Center.
    (a)
    (b)

(c)

(d)

(e)

12. How would you rate the following health care services at the West Virginia Rehabilitation Center?

(a) Nursing Services: Excellent_____ Good_____ Fair_____ Poor_____

Comments:

(b) Physician Services: Excellent_____ Good_____ Fair_____ Poor_____

Comments:

(c) Attendant Care - Orderly/Aide: Excellent_____ Good_____ Fair_____ Poor_____

Comments:

(d) Spinal Cord Injury Classes: Excellent_____ Good_____ Fair_____ Poor_____

Comments:

(e) Spinal Cord Injury Project Nurse's Individual Instruction and Written Information: Excellent_____ Good_____ Fair_____ Poor_____

Comments:

13. What areas of instruction by the Spinal Cord Injury Project Nurse were most helpful to you?

14. What areas, in your opinion, should be left out?

15. What suggestions do you have for improving the Center's health care services and education?

16. What kind of medical problems, if any, have you had since leaving the Center?

17. How often have you been in the hospital, and for what reasons?

18. How often do you see a physician for checkups?

19. How much difficulty have you had obtaining medical services and/or supplies in your community?

20. How would you rate the following information/instruction that you received while at the Center?

    (a) Information about wheelchair maintenance: Excellent______ Good______ Fair______ Poor______

    (b) Information to complete personal activities of daily living dressing adaptations: Excellent______ Good______ Fair______ Poor______

(c) Information for ordering activities of daily living equipment (provided by occupational therapist or physical therapist) if something is broken or needs replaced: Excellent______ Good______ Fair______ Poor______

(d) Information about housing modification and accessibility: Excellent______ Good______ Fair______ Poor______

21. If you returned to work, were you able to recommend the specific needed modifications to your job site? Yes______ No______

22. Are you still using equipment or modifications provided for you from the Occupational Therapist Department? Yes______ No______
If not, why?

23. Has your level of self-care improved since leaving the Center? Yes______ No______ If not, why?

24. Have you been able to get specialized equipment repaired, e.g., hand splints, braces, wheelchair? Yes______ No______

25. Were there problems finding out where to get the repairs done in your community? Yes______ No______

26. If your health is good, does your family treat you as:
(a) a healthy person who has a disability______
(b) a sick person______

27. Do you feel you are a contributing member of the family? Yes______ No______
If not, why?

28. Have you made new friends since your disability and leaving the Rehabilitation Center? Yes______ No______

29. Do you frequently travel in your community to go to the grocery store, post office, church, etc.? Yes______ No______ If not, why?

30. How long after you left the Center was it before you had contact with your field counselor?

31. Who made the contact?

You______ Family Member ______

Field Counselor______ Friend ______

32. Was the contact made by telephone______, letter______, or face to face______?

33. Do you feel that you have a good relationship with your field counselor?

Yes______ No______ If not, why?

34. Were you treated as a total person at the Center? Yes______ No______

If not, how were you treated and what changes should be made?

35. List the three West Virginia Rehabilitation Center staff persons who had the most positive influence on you during your Center program.

(a)

(b)

(c)

36. Do you feel you were ready to leave the Center when you did? Yes______ No______

If not, why?

THANK YOU FOR TAKING TIME TO COMPLETE THIS SURVEY!

Survey question number 8.

If you have not received any vocational training to prepare for a job, would you be interested in receiving training? Yes - 15 No - 8

What kind of training?

Reponse	Number of times this response was given
Bookkeeper	1
Accounting	1
Computer Science	1
Small engine repair	3
Auto body repair	1
General office work training	2
Gunsmith school	1
Remedial education	1

Survey question number 9.

Would you recommend the West Virginia Rehabilitation Center to others with spinal cord injures? Yes - 31 No - 4

Survey question number 10.

Please list five (5) positive statements about the West Virginia Rehabilitation Center.

Response	Number of times this response was given
Physical therapy	8
Occupational therapy	6
Group therapy	2
Therapy	6
Good SCI classes and program	5
Recreation	15
Friendly staff	9

Response	Number of times this response was given
Facilities good	9
Friends	7
Nurses	5
Good food	5
Nice dorm rooms	5
Staff competent and well trained	5
Medical care	4
Wide range of opportunities	3
Counseling services	3
Decent care	3
Good training areas	3
Dentist	2
Learn to take care of self	2
Offers to help one out; live a normal life	2
Mrs. Harrison's & Mr. Henderson's work with SCI	1
Mrs. Harrison	1
Good vocational evaluation program	2
It's available	2
Overall - good	1
Male orderlies working with male students instead of nurses	1
Friendly social worker	1
Exposure to other injuries	1
College training	1
Good instructors	1
Good atmosphere	1

Response	Number of times this response was given
Preparation for events like Christmas, Thanksgiving, etc., which were planned well	1
Overcome skin problems	1
Clean	1
Good family visitation accommodations	1
Students involved in monthly staffings	1

Survey question number 11.

Please list five (5) negative statements about the West Virginia Rehabilitation Center.

Response	Number of times this response was given
Food	6
Dorms	7
Treatment Unit	17
Recreation	7
Shortage of staff	2
Inadequacy of staff	8
Counseling	4
All patients treated as children or mentally incompetent	6
Facility (bad geographic location, access, etc.)	5
Poor education/training/evaluation	6
Not enough time to be with the family	2
Putting SCI students in with drug and alcohol addicts	4
Hospital care not geared toward freedom of patients	2
Apathy of other clients	1

Response	Number of times this response was given
Too much filthy language among students	1
Not enough time to adjust to living conditions and to injury	1

Survey question number 12.

How would you rate the following health care services at the West Virginia Rehabilitation Center?

(a) Nursing Services: Excellent 8; Good 15; Fair 10; Poor 3.

Response	Number of times this response was given
Need more nurses	2
Friendly	1
Not interested in work	1
Lounge too much	1
Not involved with personal care of patients	1
Three good nurses; others poor	1
They don't offer help	1
Never believe you	1
Too slow	1
Don't care	1
Prefer my family be informed of any serious illness of mine	1

(b) Physician Services: Excellent 9; Good 12; Fair 11; Poor 3.

Response	Number of times this response was given
Physician knew nothing	1
Dr. Mukkamala (WVRC Physiatrist/ Medical Director) - excellent	1

Response	Number of times this response was given
Want to experiment too much with own ideas	1
Takes too long to get to see	1
Don't listen to what we tell them	1
Does excellent job	1
Some want surgery before other possibilities are checked	1
Couldn't talk with doctor	1

(c) Attendant care - orderly/aide: Excellent 10; Good 9; Fair 9; Poor 7.

Response	Number of times this response was given
I was not involved	1
Not enough pay	2
Don't care	3
Not enough attendants	3
They don't have enough help	1
Willing to assist when needed	1
Don't wash good after body gets wet	1
Some could do better	1
Not properly trained	2

(d) Spinal Cord Injury Classes: Excellent 13; Good 13; Fair 6; Poor 2.

Response	Number of times this response was given
They were not available during my stay at WVRC	1
Mrs. Harrison - excellent	1
Very helpful	1

Response	Number of times this response was given
Go over one thing over and over	1
Attendance should be voluntary	1
Good information; need more personal input	1

(e) Spinal Cord Injury Project nurse's individual instruction and written information: Excellent 17; Good 10; Fair 5; Poor 0.

Response	Number of times this response was given
Mrs. Harrison - excellent	2
Knows job	1
Good information	1
More personalized	1
Classes don't get it	1
Instructions are needed	1
Material was written good	1
No such nurse at time of WVRC stay	1

Survey question number 13.

What areas of instruction by the Spinal Cord Injury Project nurse were most helpful to you?

Responses	Number of times this response was given
Bowel and bladder	8
Personal care	2
Knowledge of spinal cord injury	2
Skin care	5
All areas	5
Medical and prevention of medical problems	1

Responses	Number of times this response was given
Grooming	1
Meetings	1

Survey question number 14.

What areas, in your opinion, should be left out?

Responses	Number of times this response was given
No comment	18
None	18
Everything that has been drilled into your head	1

Survey question number 15.

What suggestions do you have for improving the Center's health care services and education?

Response	Number of times this response was given
No suggestions	17
Pay orderies more	1
Have nurses help orderlies	1
More orderlies	2
More staff	2
More therapists	1
More concern for student on part of the nurses	1
Health care needs more attention and training	1
More classes	1
New equipment for therapy	1
Better supervision of Treatment Unit	1

Response	Number of times this response was given
More time and patience	2
For counselors to listen to students	2
Encourage students to ask more questions and take part in understanding their "new" bodies	1
More old people	1
More baths	1
Teach patient the tricks of care so they don't need to be a slave to their injury	1

Survey question number 16.

What kind of medical problems, if any, have you had since leaving the Center?

Response	Number of times this response was given
No comment	5
None	14
Hemorrhoids	1
Controlling spasms	2
Loss of some range of motion	1
Kidney stones	3
Kidney infection	2
Back ache	1
Bladder infection	6
Legs and back ache	1
Urinary infection	1
Pressure sores	3
Infection in toes	1

Response	Number of times this response was given
Rupture of urethra wall with abscess	1
Surgery to drain internal catheter	1
Throat dilated - operation	1

Survey question number 17.

How often have you been in the hospital, and for what reasons?

Responses	Number of times this response was given
Not hospitalized	11
No comment	5
Emergency room for kidney stones	1
IVP and check-up - once	1
To have spasm medicine changed - once	1
Dehydrated and operation - twice	1
Bladder infection (3 times) cut sphincter muscle	1
Dehydration, staff infection, pressure sores - once	1
Bladder bypass - once	1
Drug overdose; 2nd degree burn on left foot - twice	1
Skin problems - once	1
Gall bladder, x-rays - once	1
Skin graft - once	1
Infections; surgery - 5 or 6 times	1
Calcium - once	1
Bladder - once	1
Broken leg & sick - 4 or 5 times	1
Bladder - twice	1

Response	Number of times this response was given
Surgery to close tracheostomy opening - once	1
Check-up - once	1
Overworked - once	1
Bladder infection - kidney stones - twice	1
IVP - once	1

Survey question number 18.

How often do you see a physician for checkups?

Response	Number of times this response was given
No comment	2
Not often	2
Whenever problems arise	3
Don't go	1
1-2 months(2 mo. 1; every mo. 4; 1-2 mo. 4)	9
3 months (3-6 mo. 1)	5
8 months	1
12 months	4

Survey question number 19.

How much difficulty have you had obtaining medical services and/or supplies in your community?

Response	Number of times this response was given
None	20
Much	6
Some	8
No comment	3

Survey question number 20.

How would you rate the following information/instruction that you received while at the Center?

(a) Information about wheelchair maintenance: Excellent 13; Good 10; Fair 5; Poor 7.

(b) Information to complete personal activities of daily living dressing adaptations: Excellent 14; Good 17; Fair 2; Poor 2.

(c) Information for ordering activities of daily living equipment (provided by occuaptional therapist or physical therapist) if something is broken or needs replaced: Excellent 6; Good 12; Fair 10; Poor 7.

(d) Information about housing modification and accessibility: Excellent 6; Good 9; Fair 8; Poor 11.

Survey question number 21.

If you returned to work, were you able to recommend the specific needed modifications to your job site? Yes - 5 No - 5

Survey question number 22.

Are you still using equipment or modifications provided for you from the Occcupational Therapy Department? Yes - 23 No - 11

If not, why?

Response	Number of times this response was given
No longer needed	1
Not using wheelchair all the time	1
Have my own wheelchair	1

Survey question number 23.

Has your level of self-care improved since leaving the Center? Yes - 31 No - 5

If not, why?

Response	Number of times this response was given
Not capable	1
Informed that I would get no better	1

Response	Number of times this response was given
Wheelchair broken	1
Don't use my hand and arms enough	1

Survey question number 24.

Have you been able to get specialized equipment repair, e.g., hand splints, braces, wheelchair? Yes - 18 No -12

Survey question number 25.

Were there problems finding out where to get the repairs done in your community? Yes - 17 No - 16

Survey question number 26.

If your health is good, does your family treat you as:

(a) a healthy person who has a disability - 34

(b) a sick person - 2

Survey question number 27.

Do you feel you are a contributing member of the family? Yes - 30 No - 5

If not, why?

Response	Number of times this response was given
I can't give my family what they need and had when I was working.	1
I do not spend enough time with my son.	1
He (son is spinal cord injured) does not help himself.	1
Not much to do but listen to stereo and talk with people	1
Not able to save money	1

Survey question number 28.

Have you made new friends since your disability and leaving the West Virginia Rehabilitation Center? Yes - 31 No - 4

Survey question number 29.

Do you frequently travel in your community to go to the grocery store, post office, church, etc? Yes - 31 No - 5

If not, why?

Response	Number of times this response was given
Financially impossible	1
Can't get out of house	1
No wheelchair	1
Don't like to go out in public - get nervous and sick at times	1
No transportation	1

Survey question number 30.

How long after you left the Center was it before you had contact with your field counselor?

Response	Number of times this response was given
Less than 1 month	18
2 months	3
3 months	1
4 months	1
6 months	2
1 year	1
Never	7

Survey question number 31.

Who made the contact?

You 11; Field counselor 14; Family member 4; Friend 0.

Survey question number 32.

Was the contact made by telephone, letter, or face to face?

Telephone 16; Letter 1; Face to face 12.

Survey question number 33.

Do you feel that you have a good relationship with your field counselor?

Yes - 23 No - 11

If not, why?

Response	Number of times this response was given
He seems unconcerned at times	1
I never saw one	1
Says one thing; does another	1
Has not contacted me	1
He never calls or returns my calls	1
I don't know him or her	1
He never comes around; doesn't seem interested	1
Does not know what he's doing	1
Listens but does nothing about it	1
Just got a new one and have had no contact with her	1

Survey question number 34.

Were you treated as a total person at the Center? Yes - 27 No - 8

If not, how were you treated and what changes should be made?

Response	Number of times this response was given
Not treated as adult	1
Too many decisions made without client participation	1

Response	Number of times this response was given
Counselors look down on you.	1
If you like being in jail or army	1
Orderlies tease you; they make you feel dumb.	1
I was not treated as individual, but as one of a multitude of persons, each with different handicaps and problems.	1
I was treated as mentally incompetent, and I was very well educated with a B. S. degree in business prior to my accident.	1

Survey question number 35.

List the three West Virginia Rehabilitation Center staff persons who had the most positive influence on you during your Center program.

Categories of Responses	Number of times this response was given
Various therapy counselors	11
Project occupational therapist	7
Project psychologist	5
Project nurse	7
Project coordinator	1
Various vocational training counselors	2
Various vocational training instructors	3
Various O.T.'s including the Chief	8
Various P.T.'s including the Chief	14
All counselors	2
All WVRC staff	1
Previous WVRC Administrator	2
Various recreation staff	7
Various T.U. nurses	3

Categories of Responses	Number of times this response was given
Various T. U. nursing assistants	2
Dormitory counselor	1

Survey question number 36.

Do you feel you were ready to leave the Center when you did?

Yes - 23 No - 10

If not, why?

Response	Number of times this response was given
Personal problems. Showed no responsibility. Was drunk and took pills.	1
I could manage on my own, but needed more time to learn more, and ask more questions.	1
They said I reached peak, but I didn't want to believe it.	1
Not enough training	1
I needed more therapy. Did not receive training; would like to come back.	1
Had some problems	1
Doctor wouldn't talk with me. I did not get treated for bladder problems. Depressed when left.	1
Was not ready to care for myself. Very ill when taken home.	1
Would like to return for more therapy and education.	1
I was just getting started on catheter training - only one day & kidney infection.	1

In addition to follow-up information obtained from this survey questionnaire, a special computer follow-up program has been initiated. All of the SCI Project clients are being tracked through the Agency's Client Management Information System.

Data obtained from the computer printout is that which is submitted by the field counselor. This information will essentially provide us with outcome results of the total rehabilitation program - employment, cases closed, etc.

It is planned that this will be done at no less than six month intervals. This may also yield some information about the hypothesis that it may take anywhere from one to five years for spinal cord injured persons to be rehabilitated.

CHAPTER 18

APPROPRIATE AND ACCESSIBLE HOUSING

For a number of years preceding the SCI Project, a major problem facing many of our severely disabled clients was the availability of appropriate and accessible housing. The housing problem has been multi-faceted in nature and scope.

In some instances, the client owned or rented housing which was inaccessible subsequent to the onset of the disability. The client frequently did not have either the financial resources or the expertise to implement the needed modifications. Also, at one point in time, our Agency could not financially assist the client with needed renovations.

The posture of the Agency then changed to permit financial assistance in the needed modifications. The situation then was one in which bids had to be obtained (by the client or the counselor) on the materials needed and for labor from a contractor. In many areas of the state, no contractors were available for this kind of work. Many larger companies declined to bid on these jobs because they were often small jobs - ramp construction, widening of doorways, etc. Other contractors declined to bid these jobs because it took the state so long to pay them after the job was done - frequently six to twelve weeks. This time lag made it difficult for them to meet their payroll and other operating expenses.

In some instances, the family abandoned the severely disabled client. After admission to the WVRC, the family closed ranks behind the client with mixed feelings of guilt and relief. In those instances where there was no vocational potential, the WVRC staff had to place the client somewhere in the community. Depending on the attendant care needs, this was frequently a nursing home or a state operated hospital or facility. This was certainly less than an ideal situation.

Fortunately, the total picture has changed dramatically in the past several years. The involvement of family members throughout the total rehabilitation program has been a significant factor. Client and family education and the SCI apartment have also contributed greatly to maintaining the integrity of the family unit. All are afforded an equal opportunity to participate in the planning, implementation, and outcomes of the rehabilitation program. Family support and involvement is evidenced by the fact that the WVRC staff placed only one SCI Project client in a nursing home upon discharge from WVRC. This was one client from a total of 133 clients served in the SCI Project.

This Agency currently operates a program which meets the housing modification needs of many of our severely disabled clients. Referrals are made to the staff in charge of our Structural Barriers/Housing Modifications Units.

After the referral is made, all concerned parties (WVRC counselor, field counselor, client, O.T., family, etc.) are invovled in the evaluation and planning of the needed modifications which include a pre-construction on-site visit. Once the details are worked out, our staff will complete the work.

The scope of services available include the installation of porch lifts, in-house chair lifts, doorway widening, ramps, bathroom and kitchen modifications, etc.

Major construction, such as the addition of rooms, is beyond the scope of our resources and manpower. However, our staff works cooperatively on an individual case basis with the client, his family, and private contractors for the major construction jobs.

The Agency also maintains an inventory of porch and in-house chair lifts. This permits rapid installation without the lengthy delays otherwise caused by the state's bidding and purchasing procedures. Other building materials are on state contract and can also be quickly obtained without cumbersome procurement procedures.

Several Project clients, either independently or with field counselor assistance, have obtained alternative housing after returning home from WVRC. These individuals have gained entry into wheelchair accessible apartments located in government subsidized housing complexes.

It is not currently believed that appropriate and accessible housing presents a substantial barrier to our spinal cord injured and other severely disabled clients. There are currently sufficient resources available to meet nearly every need in this area.

CHAPTER 19

STATISTICAL INFORMATION OF SCI PROJECT CASES

7/1/79 through 6/30/82

1. Distribution of SCI by Sex

	Project Cases	
Sex	N	%
Male	109	82
Female	24	18
All	133	

This data concurs with the findings of other researchers. Spinal cord injured individuals are predominantly males with the ratio generally being 4 to 1.

2. Distribution of SCI Between Paras and Quads

	Project Cases	
Neurological Impairment	N	%
Paraplegics	65	49
Quadriplegics	68	51
All	133	

This compares to the National SCI Data Research Center's findings of 47% paras vs. 53% quads in the 2300 cases which they reviewed and reported on in their publication, the SCI Digest.

3. Distribution of SCI by Race

	Project Cases	
Race	N	%
White	123	92
Black	10	8
All	133	

4. Age at Injury: Frequency at Five-Year Intervals

Age Range	Frequency	Cumulative Frequency	N
5-9	.752	.752	1
10-14	5.263	6.02	7
15-19	26.315	32.34	35
20-24	28.571	60.91	38
25-29	16.541	77.45	22
30-34	7.518	84.97	10
35-39	1.503	86.47	2
40-44	4.511	90.98	6
45-49	3.007	93.99	4
50-54	3.007	97.00	4
55-59	1.503	98.50	2
60-64	.751	99.25	1
65-69	.751	100.00	1

This data clearly demonstrates the high risk age group for traumatic spinal cord injury to be from age 15 to age 30.

5. Educational Leval at Time of Injury

	Project Cases	
Grade Level Completed	N	%
1 - 6	6	4
7 - 9	25	19
10-11	38	29
12 (High school grad. or GED)	44	33
13-15 (Some college)	20	15
All	133	

Of the 133 cases in this study, 85% had achieved a high school diploma or less at the time of injury.

6. Marital Status at Time of Injury

	Project Cases	
Marital Status	N	%
Single	74	56
Married	32	24
Divorced	18	14
Separated	2	1
Widowed	4	3
Other	3	2
All	133	

7. Occupational Status at Time of Injury

	Project Cases	
Occupational, Educational, or Training Status	N	%
Employed	73	55
Student	25	19
Unemployed	35	26
All	133	

Nearly three-fourths (74%) of these SCI clients were working or in a full-time student status at the time of injury.

8. Average Annual Income in Year Preceding Injury

	Project Cases	
Average Annual Income	N	%
Under $6,000	70	53
$6,000 - $8,999	24	18
$9,000 - $13,999	14	10
$14,000 - $19,999	15	11
$20,000 - $24,999	8	6
$25,000 and up	2	2
Total	133	

9. Etiology of Traumatic SCI

	Project Cases	
Etiology Category	N	%
Auto Accident	57	43
Motorcycle Accident	10	7
Gunshot Wound	21	15
Stabbing	1	1
Diving	13	10
Fall	14	11
Hit by Falling/Flying Object	8	6
Pedestrian	2	2
Other	7	5
All	133	

The National Spinal Cord Injury Data Research Center reports the following etiology on 2304 cases: auto accident-36.5%; motorcycle-6.2%; gunshot wound-11.6%; stabbing-0.4%; diving-10.6%; fall-15.8%; hit by falling/flying object-5.4%; pedestrian-1.2%; other-2.7%; and unknown-0.1%.

10. Etiology of SCI: Paras vs. Quads

	Etiology				
Neurological Impairment	Vehicular Accidents	Penetrating Wounds	Falls	Diving	Other
	%	%	%	%	%
Paraplegics	25	12	6	0	5
Quadriplegics	24	5	5	10	8
Total	49	17	11	10	13

11. SCI Etiology by Sex

	Sex			
Etiology	Male		Female	
	N	%	N	%
Vehicles	52	77	15	23
Penetrating Wounds	18	82	4	18
Falls	13	92	1	8
Diving	13	100	0	0
Other	13	76	4	24

	N	%
Males =	109	82
Females =	24	18

Of those individuals injured in vehicular accidents, 77 per cent were males and 23 per cent were females.

12. SCI Etiology by Race

	Race	
Etiology	White	Black
	%	%
Vehicular Accidents	49	2
Penetrating Wounds	14	2
Falls	8	2
Diving Accidents	9	1
Other	13	0
All	93	7

13. Race by Etiology

Race	Vehicular Accidents	Penetrating Wounds	Falls	Diving	Other
	%	%	%	%	%
White	49	14	8	9	13
Black	2	2	2	1	0
All	51	26	10	10	13

14. Neurological Impairment & Distribution by Sex
(N = 133)

			Male		Female	
Neurological Impairment	N	%	N	%	N	%
Para, Incomplete	35	26	26	19	9	7
Para, Complete	30	22	23	16	7	5
All Paras	65	49	49	37	16	12
Quad, Incomplete	51	38	45	34	6	4
Quad, Complete	17	13	15	11	2	2
All Quads	68	51	60	45	8	6

15. Site of Neurological Impairment

Level of Injury	N
C-1, 2	1
C-3, 4	4
C-4, 5	12
C-5, 6	28
C-6, 7	19
C-7, 8	3
C-8, T-1	2
T-3, 4	2
T-4, 5	8
T-5, 6	7
T-6, 7	4
T-7, 8	2
T-8, 9	6
T-9, 10	5
T-10, 11	6
T-11, 12	5
T-12, L-1	6
L-1, 2	6
L-2, 3	1
L-3	1
Unknown	5

16. WVRC or Other Rehabiitation Facility Direct Admissions From Acute Care/Delayed Admissions

	Para IC		Para C		All Paras		Male Paras		Female Paras		Quad IC		Quad C		All Quads		Male Quads		Female Quads	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Direct admissions from acute care	16	12	17	13	33	25	23	16	9	7	33	25	4	3	37	27	31	23	6	4
Delayed	19	15	13	10	32	24	26	19	6	4	19	15	12	10	31	23	28	21	2	2

IC = Incomplete spinal cord injury

C = Complete spinal cord injury

17. Length of Wait on Delayed Admissions (Acute Care - Home - WVRC)

Time Elapsed	Male Para	Female Para	Male Quad	Female Quad
Less than 1 month	4		5	
1 month	9	2	8	1
2 months	1	2	3	
3 months		1	1	
4 months	1		1	
5 months			2	
6 months				
7 months	1		1	
8 months	1	1	1	
9 months			2	
10 months	1			
15 or more months	8		5	1

18. SCI Project Clients by County of Residence

(N = 133)

Barbour	1
Berkeley	1
Boone	2
Braxton	1
Brooke	2
Cabell	5
Calhoun	0
Clay	0
Doddridge	0
Fayette	6
Gilmer	0
Grant	1
Greenbrier	4
Hampshire	0
Hancock	0
Hardy	0
Harrison	4
Jackson	2
Jefferson	3
Kanawha	30
Lewis	2
Lincoln	4
Logan	5
McDowell	5
Marion	4
Marshall	1
Mason	6
Mercer	3
Mineral	3
Mingo	3
Monongalia	6
Monroe	1
Morgan	0
Nicholas	2
Ohio	0
Pendleton	0
Pleasants	0
Pocahontas	1
Preston	4
Putnam	1
Raleigh	3
Randolph	2
Ritchie	0
Roane	1
Summers	0
Taylor	1
Tucker	0
Tyler	0
Upshur	0
Wayne	3
Webster	3
Wetzel	1
Wirt	0
Wood	2
Wyoming	4

CHAPTER 20

WVRC DATA ON SCI PROJECT CLIENTS

Status of SCI Project Cases at Time of WVRC Admission

Status 06

96 clients (72.2% of the total Project caseload)

Status 10

3 clients (2.3% of the total Project caseload)

Status 12

3 clients (2.3% of the total Project caseload)

Status 16

17 clients (12.8% of the total Project caseload)

Status 18

12 clients (9.0% of the total Project caseload)

Status 22

2 clients (1.5% of the total Project caseload)

It should be kept in mind that a number of Project clients were "grandfathered" into the Project by being enrolled in various WVRC programs at the beginning of the Project.

Clients Served At Other Rehabilitation Facilities

1. McGuire Veterans Administration Hospital, Hampton, VA - 4 clients
2. Towers Unit/University of Virginia Hospital, Charlottesville, VA - 7 clients
3. Institute of Physical Medicine & Rehabilitation, Louisville, KY - 7 clients
4. Woodrow Wilson Rehabilitation Center, Fishersville, VA - 4 clients
5. A Michigan rehabilitation center - 1 client
6. Duke University Medical Center, Durham, NC - 2 clients
7. Dodd Hall, Ohio State University, Columbus, OH - 2 clients
8. Rehabilitation Unit, St. Francis Hospital, Pittsburgh, PA - 2 clients
9. Cleveland VA Hospital, SCI Unit, Cleveland, OH - 1 client
10. Veterans Administration Hospital, Clarksburg, WV - 3 clients
11. Rehabilitation Institute of Chicago, Chicago, IL - 2 clients
12. Cardinal Hill, Lexington, KY - 2 clients
13. Spain Rehabilitation Center, Birmingham, AL - 1 client
14. Veterans Administration Hospital, Martinsburg, WV - 1 client

Project Clients Readmitted for Additional Programs/ Services After Initial Completion of Physical/Mental Restoration Program Only

Vocational Evaluation - 9 clients (6.8% of the total Project caseload)

Vocational Training - 3 clients (2.3% of the total Project caseload)

Sheltered Workshop - 1 client (0.8% of the total Project caseload)

Physical/Mental Restoration - 2 clients (1.5% of the total Project caseload)

Cumulative total of clients returning = 15 (11.3% of the total Project caseload)

This also means that these 15 clients comprise 39.5% of those 38 who left after completing therapy only.

Project Clients Terminating from WVRC After Receiving Physical/Mental Restoration Services Only

38 clients (28.6% of total Project caseload)

There are a number of considerations in these figures. A number of clients were either direct transfers to WVRC from another health care facility or were home only a brief period of time before WVRC admission. These individuals legitimately wished to spend time at home before the next phase of their rehabilitation program. Others simply did not like and could not adjust to the WVRC. In some instances, there was a waiting period for certain WVRC programs, such as vocational evaluation or vocational training programs.

Number of SCI Clients Leaving the WVRC Before Completing Their Physical/Mental Restoration Programs

Voluntary Withdrawal - 19 clients (14.3% of the total Project caseload)

Disciplinary Terminations - 5 clients (3.8% of the total Project caseload)

Disciplinary terminations were due to non-compliance with the agreed upon rehabilitation program or infractions of the Center's rules governing client behavior. Some of these clients and those who voluntarily withdrew returned at a later date for further services.

Medical Termination - 1 client (0.8% of the total Project caseload)

This client had other medical problems which rendered him incapable of participating in his therapy programs.

This is a cumulative total of 25 clients or 18.8% of the total Project caseload.

CHAPTER 21

SCI PROJECT STATUS 26 CLOSURES

(Status 26 = Case Closed - Rehabilitated)

As the following pages will show, 18 clients' cases were closed in Status 26 during the operation of the SCI Project. These 18 closures represent 13.5 per cent of the total of 133 clients served in this Project. Eight of these cases were closed as homemakers. It should be pointed out that five of the eight homemaker clients were functioning as homemakers prior to their spinal cord injuries.

The original Project proposal made statistical estimates that 23 clients would be rehabilitated during its operation. These 18 Status 26 closures represent a 78 per cent attainment of that original estimate.

It was also estimated that a total of 90 clients would be served during our 36 months of operation. The final tally was 133 SCI Project clients. This figure exceeds our original estimate by 148 per cent. This increased number is indicative of success in reducing lengths of stay. This may also be indicative of a higher incidence of spinal cord injury in West Virginia than originally thought to be the case. More research would have to be done to document this.

At the time of this writing, the most current Agency computer printout on the SCI Project clients reveals the following information.

Status 18

(Status 18 = Receiving rehabilitation training)

15 clients

Status 20

(Status 20 = Ready for employment)

9 clients

Status 22

(Status 22 = In employment)

2 clients

A total of 26 clients are in the combined Statuses of 18, 20, and 22. This constitutes 19.5 per cent of the total Project caseload of 133 clients. A separate section of this report will deal with the status of the remainder of the Project clients.

SCI Project Status 26 Closures

	Employment	DOT Code
Client 1 - 41-year-old male, T-5/6 paraplegic-complete	Electronic unit repairman	7292
Client 2 - 36-year-old female, C-6/7 quadriplegic-incomplete	Homemaker	5999
Client 3 - 23-year-old male, C-5/6 quadriplegic-incomplete	Truck driver	9048
Client 4 - 30-year-old male, C-5/6 quadriplegic-incomplete	Homemaker	5999
Client 5 - 35-year-old male, C-3/4, quadriplegic-complete	Social worker	1951
Client 6 - 46-year-old female, level unknown, paraplegic-incomplete	Homemaker	5999
Client 7 - 68-year-old male, T-5/6, paraplegic-incomplete	Homemaker	5999
Client 8 - 27-year-old male, T-3/4, paraplegic-complete	Homemaker	5999
Client 9 - 29-year-old male, L-1/L-4, paraplegic-incomplete	Radio disc jockey	1591
Client 10 - 25-year-old male, L-1/2, paraplegic-incomplete	Automobile mechanic	6202
Client 11 - 37-year-old male, T-4/5, paraplegic-incomplete	Quality control inspector/engineer	7012
Client 12 - 48-year-old male, C-5/6, quadriplegic-complete	Counselor	7042
Client 13 - 31-year-old male, C-4/5, quadriplegic-incomplete	Counselor	7042
Client 14 - 28-year-old female, T-10, paraplegic-incomplete	Secretary	2030
Client 15 - 64-year-old male, L-1, paraplegic-incomplete	Homemaker	5999
Client 16 - 55-year-old male, C-1/2, quadriplegic-incomplete	Homemaker	5999
Client 17 - 29-year-old female, T-6, paraplegic-incomplete	Homemaker	5999
Client 18 - 30-year-old male, T-8/9, paraplegic-complete	Welder	992

Client 1

This client is a single, 41-year-old, white, male paraplegic. He has a complete paraplegia at the T-5/6 level. The cause of injury was a gunshot wound sustained in 1956. He is completely dependent on his wheelchair for mobility.

The client had two prior admissions to WVRC in 1960 and 1967. These did not lead to employment. The client is from a very rural and remote area of West Virginia.

His third admission to WVRC was for a tryout in the Radio-TV Repair training area. He passed his tryout and successfully completed the training program.

Upon graduation, he received WVRC Job Placement services and is employed in the Charleston area as an electronic unit repairer. He lives independently in a wheelchair accessible apartment and drives his own automobile to work.

Client 2

This client is a 36-year-old white female with incomplete quadriplegia at the C-6/7 level. She requires a wheelchair for mobility, but is complete in self-care.

The client is married with children and was functioning as a homemaker at the time of her automobile accident in March of 1980. She was a direct transfer to WVRC from the University of Virginia Hospital/Towers Unit in Charlottesville, Virginia.

She received physical restoration services at WVRC. The successful completion of this program has enabled her to return home and resume her previous homemaking duties.

This client also comes from a very rural part of West Virginia. Since returning home, she has been very active in community and civic affairs in promoting handicapped consumer causes with particular emphasis on structural barriers in the community. This client was Miss Wheelchair West Virginia for 1981-82.

Client 3

This client is a single, 23-year-old, white male with incomplete quadriplegia at the C-5/6 level. The injury was sustained in an automobile accident in December of 1976. He is fortunate in having minimal residuals from his injury and is ambulatory and complete in self-care.

He was admitted to WVRC in September of 1977 for a program of physical restoration which he successfully completed. The second admission occurred in May of 1978 for Vocational Evaluation which was completed and the recommendation made that he be trained in the Upholstery training area. Training in this area began in July of 1978.

The client graduated from this training area and is employed by a large Charleston area firm which supplies automobile parts and specializes in auto glass replacement, auto upholstery, and auto convertible tops. The client is a Charleston area resident.

Client 4

This client is a single, white, 30-year-old male who sustained a C-5/6 incomplete quadriplegia as the result of an automobile accident in July of 1977. Prior to his injury, he was employed as a bricklayer.

His first WVRC admission was in January of 1978 for a physical restoration program which he successfully completed. He is ambulatory with leg braces and crutches and complete in self-care activities.

He was readmitted in June of 1980 for additional therapy and also completed Vocational Evaluation while at the Center. Vocational training in Drafting was recommended, but the client declined the training. He is currently functioning as a homemaker.

Client 5

This client is a single, white, 35-year-old male who sustained a complete C-3/4 quadriplegia in a diving accident in June of 1961 at the age of 15.

He was admitted to the WVRC in August of 1975. While here, he completed his physical restoration and Vocational Evaluation programs. He resided on the Treatment Unit while he completed a 4 year college training program at an adjacent college. He maintained a straight-A (4.0) average throughout college while majoring in psychology and social work. This is significant in that this client is a total attendant care quadriplegic who performs all activities with a mouthstick.

This client has wonderful family support and care as evidenced by his excellent state of health. His field counselor assisted him in obtaining employment as a social worker in a state operated hospital. His family commutes him daily to work in a lift-equipped van. He has been employed for over a year with excellent performance ratings from his supervisors.

Client 6

This 46-year-old, white, married female became paraplegic from the administration of spinal anesthesia during childbirth in 1960. She is wheelchair dependent for mobility.

She was admitted to WVRC in July of 1981 for physical restoration services which she successfully completed. Therapy was needed to restore some functional ADL skills which she had been gradually losing. She returned home able to resume her role as a homemaker.

Client 7

This 68-year-old, white, divorced male became paraplegic in June of 1981 with an incomplete lesion at the T-5/6 level. The cause of injury was a fall. The client had retired only a few months before the accident from a full-time job as a security guard.

He was admitted to WVRC in October of 1981 for physical restoration services which he successfully completed. After discharge, he returned to his home where he continues to function as a homemaker with partial wheelchair usage.

Client 8

An automobile accident in February of 1981 resulted in a T-3/4, complete paraplegia for this white, single, 27-year-old male. He had no significant vocational history prior to his injury. He comes from a rural West Virginia county and had a very undesirable family situation with a disabled, alcoholic father and many younger siblings still at home.

Subsequent to WVRC admission in January of 1979, he received therapy, vocational evaluation, and Sheltered Workshop services. No suitable vocational training was identified.

After returning home, he was able to get a wheelchair accessible apartment in federally subsidized housing. This curtailed his own abuse of alcohol which occurred when his father went on periodic drinking binges. He is functioning successfully as a homemaker.

Client 9

This 29-year-old, white, single male sustained an L-1 to L-4 incomplete paraplegia in March of 1981 as the result of a fall. The client was working as a radio disc jockey prior to his injury.

The client was admitted to WVRC in April of 1981 for physical restoration services which he successfully completed. He now ambulates with the use of a short leg brace.

The client has returned to his pre-accident employment.

Client 10

A motorcycle accident in November of 1978 produced an incomplete L-1/2 paraplegia for this white, single, 25-year-old male. Residuals of the injury require ambulation with Canadian crutches.

He was admitted to WVRC in June of 1979 and completed his therapy, vocational evaluation, and vocational training in Automatic Transmission Repair. He is presently employed as an auto mechanic in the Charleston area.

Client 11

This 37-year-old, white, divorced male sustained a gunshot wound in October of 1977 with resultant T-4/5 incomplete paraplegia. Mobility is achieved by use of a wheelchair. Prior to injury, he was employed in Chicago, Illinois, as a quality control inspector/engineer.

The client entered the WVRC in November of 1981 for a therapy program which he completed. He then re-entered WVRC in January of 1982 for a tryout in Drafting training with subsequent training in this area commencing in April of 1982. He withdrew from this program in June of 1982 to resume his previous employment.

Client 12

An automobile accident in July of 1958 resulted in a complete C-5/6 quadriplegia for this client. He is a 48-year-old, white, single male. The client had multiple WVRC admissions between the time of his injury and his last admission in February of 1973.

During the last admission, he completed programs in therapy, vocational evaluation, and his college training. Mobility is by power wheelchair, and he has some attendant care needs.

The client has been successfully employed for several years at this facility as a dormitory counselor and drives himself to work daily in a specially equipped van.

Client 13

This client is a 31-year-old white, single male with C-4/5 incomplete quadriplegia resulting from an automobile accident in October of 1968. This client had two admissions to WVRC with the first in June of 1970 for therapy. He returned for additional therapy, vocational evaluation, accounting training, and completed a 4 year college training program at an adjacent college.

This client has attendant care needs and utilizes a power wheelchair for mobility. He shares a modified mobile home and a live-in attendant with Client 12. He drives himself to work daily in a specially equipped van. He has been employed at this facility for several years as a counselor in the Medical Services unit.

Client 14

This white, married, 28-year-old female was involved in an automobile accident in September of 1980 with resultant incomplete T-10 paraplegia. She entered WVRC in May of 1981 and successfully completed her therapy program. She is primarily wheelchair dependent but can ambulate for short distances with a walker and leg braces.

She functioned as a homemaker prior to her injury. Upon returning home, she found employment as a secretary in addition to her homemaking duties.

Client 15

This client is a black, married, 64-year-old male who sustained an incomplete L-1 paraplegia as the result of a fall in July of 1980. He was admitted to WVRC in September of 1980 for physical restoration services. He completed therapy and is a wheelchair user for mobility purposes.

Prior to his injury, he worked two full-time jobs. He has taken retirement and is functioning as a homemaker.

Client 16

This client sustained a rather unusual spinal cord injury which occurred from a blow to the neck from a jack which slipped while a tire was being changed on a car in September of 1979. He is a 55-year-old, white, divorced male with incomplete quadriplegia at the C-1/2 level.

His WVRC physical restoration program began in June of 1980 and was successfully completed. He functions primarily from the wheelchair, but can ambulate very short distances with Lofstrand crutches and assistance.

This client had been disabled for a number of years prior to his spinal cord injury and worked as a homemaker. He has returned home and continues to function as a homemaker.

Client 17

This client is a white, married, 29-year-old female with an incomplete T-6 paraplegia from a self-inflicted gunshot wound in May of 1980. She was treated initially in Alabama where she lived at the time and received physical restoration services at the Spain Rehabilitation Center. She was a homemaker at the time of her injury.

She was admitted to WVRC in July of 1981 to explore the feasibility of ambulation with braces. She was determined not to be a candidate for this. Through WVRC services and assistance from her field counselor, she continues to live at home and function as a homemaker.

Client 18

This white, 30-year-old, single male sustained a T-8/9 complete paraplegia as the result of a motorcycle accident in April of 1979. Prior to his injury, he was employed by one of the major industries in the Kanawha Valley as a welder.

A WVRC physical restoration program was initiated in July of 1979. Subsequent to completion of this program, he was able to return to his previous employment and perform welding from a bench since he functions from the wheelchair.

CHAPTER 22

STATUS OF SCI PROJECT CASES
(Excluding those in Status 10, 20, 22, and 26)

Status 00
(Status 00 = Client referral status)

1 client (0.8% of the total Project caseload)

This client's case had been previously closed as not rehabilitated, and he was referred back for further services.

Status 02
(Status 02 = Client applicant phase)

1 client (0.8% of the total Project caseload)

This client's case had likewise been closed in a non-rehabilitated status, and he is now reapplying for services.

Status 06
(Status 06 = Extended Evaluation - 18 month time limit)

In Status 06, client is receiving services on a trial basis to determine whether rehabilitation services will benefit his employability.

27 clients (20.0% of the total Project caseload)

Because of the severity of the disability of spinal cord injury, this is a commonly used pre-service status. The majority of Project clients who were recently injured entered the WVRC with their case in this status.

Status 08
(Status 08 = Case closed as not rehabilitated from the referral, applicant, or extended evaluation phase)

19 clients (14.3% of the total Project caseload)

Two of the Project clients whose cases were closed in this status died following medical complications involving their spinal cord injury. One client's case was closed after incarceration in the state's maximum security prison under an extensive sentence. One client moved out of state subsequent to WVRC discharge. Other clients were determined not eligible for further services based on a variety of reasons.

The field counselor was unable to locate one client after repeated efforts to do so. Several clients simply declined further services and voluntarily withdrew from their rehabilitation program.

The most disappointing case in this catetory was the individual who had an opportunity to return to his previous employment, but declined to do so. His field counselor had worked with his former employer and arranged for the restructuring of job duties. The employer was most cooperative and willing in these efforts. However, the client believes himself incapable of competitive employment and has pathological concerns about being in public and interacting with his former co-workers and supervisor.

Status 10

(Status 10 = This status denotes that the client has been found eligible for rehabilitation services and that the counselor and client are jointly developing the individualized written rehabilitation program - IWRP)

11 clients (8.3% of the total Project caseload)

Status 12

(Status 12 = This active caseload status denotes that the original IWRP, for the client who did not receive extended evaluation, or the IWRP in-service amendment, for the client who received extended evaluation, has been developed and approved and is ready to be implemented.)

2 clients (1.5% of the total Project caseload)

Status 16

(Status 16 = This active caseload status denotes that the client is receiving physical and/or mental restoration services as the major service in keeping with his original or amended IWRP.)

13 clients (9.8% of the total Project caseload)

Status 24

(Status 24 = This active caseload status denotes an interruption for an indefinite period of services being received by the client.)

4 clients (3.0% of the total Project caseload)

The clients in this category are experiencing a variety of personal adjustment, familial, and health problems.

Status 28

(Status 28 = This is a closure status that identifies any client
who was found eligible for rehabilitation services and
received at least one service under an IWRP,
but for one or more reasons listed below
could not complete his program.

REASONS FOR CLOSURE. Among the appropriate reasons for closing the case into Status 28 are:

1. Death of the client;
2. Institutionalization of the client;
3. Unfavorable medical prognosis;
4. Inability to contact the client;
5. Refusal of the client to continue the program; and
6. Transfer of the case to an out-of-state rehabilitation agency.)

10 clients (7.5% of the total Project caseload)

Of these clients, one was killed in an automobile accident and one moved from the state. The remainder are a mixture of the reasons cited above.

Status 30

(Status 30 = This is a closure status that identifies any client
who was found eligible for rehabilitation, but whose case
was closed prior to receiving any services under his
IWRP or was closed prior to development, signing,
and initiation of his initial IWRP.)

1 client (0.8% of the total Project caseload)

In summary, 30 clients have had their cases closed in Status 08, 28, or 30. This constitutes 22.6 per cent of the total Project caseload.

CHAPTER 23

WVRC COSTS (FISCAL EXPENDITURES) FOR SCI PROJECT CLIENTS

Costs include any and all services paid for from WVRC's case service budget(s) or operating budget. Examples of services are room and board, therapy services, prosthetic/orthotic devices, surgery, etc. Case service funds are funds which are specifically earmarked for the purchase of services for individual clients. WVRC's operating budget includes staff salaries, fringe benefits, physical plant costs, etc. Also included in these figures were the Innovation and Expansion funds available to this Project.

Cost figures do not include those services provided through third party benefits such as Workmen's Compensation, Medicare, Medicaid, Crippled Children's Services from the W. Va. Department of Welfare, private insurance, etc. Only eight clients (15%) of the total of the fifty-two clients included in this cost study had DVR funding only. We have no mechanism for knowing what the third party providers contributed financially to the client's rehabilitation program.

Clients included in this cost study are individuals who were admitted to the WVRC for physical/mental restoration (therapy) services. This was their first admission to WVRC, and they completed their scheduled therapy programs. All clients were in-patients of the WVRC with residency either in the Treatment Unit or dormitory.

MALE PARAPLEGICS

Clients	Costs
Client 1	$ 8,361.00
Client 2	9,302.50
Client 3	5,540.00
Client 4	5,154.00
Client 5	25,161.00
Client 6	3,846.77
Client 7	12,110.00
Client 8	6,879.00
Client 9	5,643.00
Client 10	10,852.00
Client 11	5,552.00
Client 12	7,961.00
Client 13	4,986.00
Client 14	10,984.19
Client 15	4,349.00
Total =	$126,681.46

Average cost per case $= \frac{\$126,681.46}{15} = \$8,445.43$

FUNDING SOURCES AND THIRD PARTY RESOURCES

MALE PARAPLEGICS

Client 1	Private insurance
Client 2	Private insurance
Client 3	Medicaid
Client 4	Private insurance
Client 5	Private insurance
Client 6	Medicare
Client 7	Private insurance
Client 8	Private insurance
Client 9	DVR only
Client 10	United Mine Workers of America insurance
Client 11	Medicaid
Client 12	DVR only
Client 13	Private insurance
Client 14	W. Va. Workmen's Compensation - full coverage
Client 15	Private insurance

FEMALE PARAPLEGICS

Clients	Costs
Client 1	$ 8,099.28
Client 2	6,108.00
Client 3	4,334.00
Client 4	7,460.00
Client 5	8,565.00
Client 6	4,620.00
Client 7	11,339.00
Client 8	13,541.00
Total =	$64,066.28

$$\text{Average cost per case} = \frac{\$64{,}066.28}{8} = \$8{,}008.29$$

FUNDING SOURCES AND THIRD PARTY RESOURCES

Female Paraplegics

Client 1	Medicare
Client 2	Private insurance
Client 3	Private insurance
Client 4	DVR only
Client 5	Medicaid
Client 6	Federal Employees Insurance - SAMBA
Client 7	Private insurance
Client 8	W. Va. Department of Welfare - Crippled Children

MALE QUADRIPLEGICS

Clients	Costs
Client 1	$ 11,550.00
Client 2	16,092.00
Client 3	41,583.00
Client 4	18,696.00
Client 5	17,383.00
Client 6	20,207.14
Client 7	48,965.00
Client 8	12,753.00
Client 9	13,704.00
Client 10	21,806.97
Client 11	15,078.00
Client 12	42,275.00
Client 13	20,497.00
Client 14	15,852.00
Client 15	17,802.00
Client 16	20,543.00
Client 17	13,492.00
Client 18	12,549.00
Client 19	19,080.00
Client 20	12,849.00
Client 21	17,649.00
Total =	$430,406.11

$$\text{Average cost per case} = \frac{\$430{,}406.11}{21} = \$20{,}495.53$$

FUNDING SOURCES AND THIRD PARTY RESOURCES

Male Quadriplegics

Client 1	Private insurance
Client 2	Private insurance
Client 3	Private insurance
Client 4	Medicaid
Client 5	Private insurance
Client 6	Medicaid
Client 7	Medicaid
Client 8	DVR only
Client 9	Medicaid
Client 10	Medicaid/Veteran's Administration
Client 11	Private insurance
Client 12	United Mine Workers of America insurance
Client 13	Veterans Administration
Client 14	W. Va. Workmen's Compensation - full coverage
Client 15	Medicaid
Client 16	United Mine Workers of America insurance
Client 17	DVR only
Client 18	DVR only
Client 19	Private insurance
Client 20	Private insurance
Client 21	Medicaid

FEMALE QUADRIPLEGICS

Clients	Costs
Client 1	$ 8,782.00
Client 2	5,907.00
Client 3	10,904.00
Client 4	11,093.00
Client 5	20,080.00
Client 6	11,016.00
Client 7	11,634.00
Client 8	13,060.00
Total =	$92,476.00

Average cost per case = $\frac{\$92,476.00}{8}$ = $11,559.50

FUNDING SOURCES AND THIRD PARTY RESOURCES

Female Quadriplegics

Client 1	Private insurance
Client 2	Medicaid
Client 3	Medicaid/CHAMPUS
Client 4	Medicaid
Client 5	DVR only
Client 6	United Mine Workers of America insurance
Client 7	DVR only
Client 8	Private insurance

WVRC CASE SERVICE ALLOCATIONS

July 1, 1979-June 30, 1980 = $221,968.00

July 1, 1980-June 30, 1981 = $270,968.00

July 1, 1981-June 30, 1982 = $122,593.00

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WVRC OPERATING BUDGET

July 1, 1979-June 30, 1980 = $5,816,006.00

July 1, 1980-June 30, 1981 = $5,803,898.00

July 1, 1981-June 30, 1982 = $6,246,693.00

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TOTAL WVRC FISCAL RESOURCES

(Sum of case service allocations and operating budget)

July 1, 1979-June 30, 1980 = $6,037,974.00

July 1, 1980-June 30, 1981 = $6,074,866.00

July 1, 1981-June 30, 1982 = $6,369,286.00

Total =$18,482,126.00

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AVERAGE AMOUNT OF WVRC RESOURCES PER YEAR

Average = $6,160,709.00

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TOTAL WVRC ENROLLMENT

(Includes residents, commuters, and outpatients)

July 1, 1979-June 30, 1980 = 1424 clients

July 1, 1980-June 30, 1981 = 1406 clients

July 1, 1981-June 30, 1982 = 1400 clients
Average annual enrollment = 1410 clients

TOTAL SCI PROJECT CLIENTS BY SEX AND INJURY LEVEL

Total SCI Project clients = 133
(7/1/79 - 6/30/82)

Total Male Paraplegics = 50
Total Female Paraplegics = 15
Total Male Quadriplegics = 59
Total Female Quadriplegics = 9

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AVERAGE NUMBER OF SCI PROJECT CASES PER YEAR BY SEX AND INJURY LEVEL

(Figures rounded to nearest whole number)

Male paraplegics = 17
Female paraplegics = 5
Male quadriplegics = 20
Female quadriplegics = 3

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AVERAGE ANNUAL NUMBER OF WVRC ADMISSIONS FOR ALL TRAUMATIC SCI CLIENTS

Average = 44 clients

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AVERAGE COST PER YEAR FROM WVRC BUDGET

(This includes case service allocations and WVRC operating budget.)

Male paraplegics	=	17 admissions x per year	$8,445.00 per case	=	$143,565.00
Female paraplegics	=	5 admissions x per year	$8,008.00 per case	=	$ 40,040.00
Male quadriplegics	=	20 admissions x per year	$20,495.00 per case	=	$409,900.00
Female quadriplegics	=	3 admissions x per year	$11,560.00 per case	=	$ 34,680.00

Annual total resources spent on traumatic SCI clients at WVRC = $628,185.00

$$\frac{\text{44 (average annual WVRC admissions for traumatic SCI clients)}}{\text{1410 (average WVRC enrollment for all clients)}} = \text{0.031 or 3\% of all annual WVRC admissions are traumatic SCI clients}$$

$$\frac{\text{\$628,185.00 (average annual total spent on traumatic SCI clients)}}{\text{\$6,160,709.00 (average annual amount of total WVRC resources)}} = \text{0.102 or 10\% of total WVRC resources}$$

These figures tend to confirm for this disability group what we have known to be true for individual spinal cord injured cases. This is one of the most, if not the most, expensive disability groups to rehabilitate. Again, it should be noted that the cost figures do not include third party benefits, any pre- and post-WVRC expenditures by DVR, or costs borne by the spinal cord injured person or family.

By virtue of this large monetary commitment, this facility and the Agency would be ill advised to decrease its services and programs for this disability group. As stated in the original grant proposal, success in these cases will require both quantity and quality programs within this facility and in the community.

CHAPTER 24

SCI PROJECT FISCAL DATA

(Figures include personnel costs, excluding fringe benefits, for the 36 months of the Project's operation - 7/1/79 to 6/30/82.)

Fiscal Year 1979 (7/1/79 to 9/30/79)	$21,375.00	-	I & E Funds
Fiscal Year 1980 (10/1/79 to 9/30/80)	87,168.00	-	I & E Funds
Fiscal Year 1981 (10/1/80 to 9/30/81)	92,172.00	-	Section 110 Funds (I & E Funds no longer available.)
Fiscal Year 1982 (10/1/81 to 6/30/82)	89,433.00		Section 110 Funds
Total =	$290,148.00		

The SCI Project did not incur any office rental expenses since we were housed within the WVRC complex. Some initial expenses included the purchase of dictation equipment, typewriter, audiovisual equipment, and office furniture and equipment for part of the Project staff. Other major expenditures during the operation of the Project included the following: appliances and furnishings for the SCI apartment; teaching models for intermittent catheterization and skin care; and printing costs for Project generated educational and spinal cord injury prevention materials.

CHAPTER 25

COST EFFECTIVENESS CONSIDERATIONS

Data for these computations are drawn from other sections in this report. These include the sections on length of stay studies, intercurrent illnesses, and WVRC average annual admissions of spinal cord injured clients by injury level and sex.

Average Number of SCI Project Cases Per Year
By Sex and Injury Level

(Figures rounded to nearest whole number)

Male paraplegics = 17
Female paraplegics = 5
Male quadriplegics = 20
Female quadriplegics = 3

Length of Stay Results (Pre-Project versus Project)

Male paraplegics - Treatment Unit length of stay declined by 4.6 months

Female paraplegics - Treatment Unit length of stay declined by 5.0 months

Male quadriplegics - Treatment Unit length of stay declined by 5.0 months

Female quadriplegics - Treatment Unit length of stay declined by 11.6 months

WVRC Fees Currently in Use
(Fee schedule dated April 1, 1979)

Treatment Unit accommodations = $60.00 per day

Physical Therapy = $12.00 per hour

Occupational Therapy = $15.00 per hour

For projected cost estimates, calculations will be based on receiving one hour each per day of physical therapy and occupational therapy. There are considered to be an average of 22 days per month during which therapy is available and scheduled (Monday through Friday). Treatment Unit per diem is billed 7 days a week with an average month considered to have 30 days.

Male paraplegics

17 clients per year x 4.6 months x 30 days per month x
$60.00 Treatment Unit per diem = $140,760.00

17 clients per year x 4.6 months x 22 average therapy days per month x $12.00 per hour P. T. costs = $20,645.00

17 clients per year x 4.6 months x 22 average therapy days per month x $15.00 per hour O. T. costs = $25,806.00

Total = $187.211.00

Female paraplegics

5 clients per year x 5.0 months x 30 days per month x $60.00 Treatment Unit per diem = $45,000.00

5 clients per year x 5.0 months x 22 average therapy days per month x $12.00 per hour P. T. costs = $6,600.00

5 clients per year x 5.0 months x 22 average therapy days per month x $15.00 per hour O. T. costs = $8,250.00

Total = $59,850.00

Male quadriplegics

20 clients per year x 5.0 months x 30 days per month x $60.00 Treatment Unit per diem = $180,000.00

20 clients per year x 5.0 months x 22 average therapy days per month x $12.00 per hour P. T. costs = $26,400.00

20 clients per year x 5.0 months x 22 average therapy days per month x $15.00 per hour O. T. costs = $33,000.00

Total = $239,400.00

Female paraplegics

3 clients per year x 11.6 months x 30 days per month x $60.00 Treatment Unit per diem = $62,640.00

3 clients per year x 11.6 months x 22 average therapy days per month x $12.00 per hour P. T. costs = $9,187.00

3 clients per year x 11.6 months x 22 average therapy days per month x $15.00 per hour O. T. costs = $11,484.00

Total = $83,311.00

Grand total projected savings per year for all SCI clients = $569,722.00

These cost savings were computed based on improved lengths of stay for the Treatment Unit only. No consideration is given for cost savings which have resulted from improvements in the incidence of intercurrent illnesses. There is no way to estimate this, but the resultant savings would be substantial. Another factor which has tended to lower the grand total figure is the fact that the fee schedule used is dated April 1, 1979. This is WVRC's most current fee schedule, but there is no doubt that our costs have substantially increased.

CHAPTER 26

SCI PROJECT EDUCATIONAL MATERIALS

The following is a list of the educational materials developed and distributed during the operation of this Project. Some of the ideas were new while others were borrowed from a variety of sources.

1. "healing and wheeling"

This was the large manual which was developed as a self-care guide for the spinal cord injured person and his family. A table of contents is attached. Over 500 copies of the manual were distributed to its primary audience, as well as to our rehabilitation staff and a multitude of other health care professionals.

2. SCI Posters/Bookmarks

Two posters and one bookmark were developed and widely distributed. One poster dealt with vehicular accidents which are the leading cause of spinal cord injury. The other poster dealt with swimming/diving accidents as a cause of spinal cord injury. The bookmark also had the theme of preventing swimming/diving accidents with the reverse side containing first aid/evacuation procedures for the SCI victim in the water.

Posters were sent to every public junior high and high school in each county prior to the 1981 summer recess. Sufficient bookmarks (200,000) were also sent to each county so that every junior high and high school student received one before school recessed. Positive feedback on these materials has been received.

Additionally, 1,000 each of the posters and 15,000 of the bookmarks were sent to the District Office of the American Red Cross in Charleston, WV. These were distributed throughout the several county area which they serve.

Other means of distribution was through the local chapter of the National Spinal Cord Injury Association and the SCI Unit staff at CAMC/General Division.

3. Autonomic dysreflexia ID card

This is dealt with in detail in another section of this report.

4. SCI Nursing Manual

A separate manual on nursing care of the SCI client was developed for in-house use of WVRC's nursing staff.

"healing and wheeling"
(A self-care guide for the spinal cord injured person)

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CHAPTER 27

FINAL RECOMMENDATIONS, PROJECT IMPLICATIONS AND RECOMMENDATIONS FOR FUTURE SERVICES/PROGRAMS FOR SPECIFIC DISABILITY GROUPS

From a nursing point of view, it is felt that client/family education on the medical aspects of disability is extremely important. If a person's health is not good or is not as good as it could be, every aspect of life will be affected. Emphasis on preventive health measures needs to be a continuous process. Education should be done by both group and individual teaching methods. It is recommended that a better method of evaluating learning be utilized. Many of the education methods used with the SCI Project can be used for teaching all disabilities. With a nurse educator to coordinate education programs, almost all Medical Services staff can be utilized in the teaching process.

Because of the high incidence of urinary tract infections, it is recommended that a urological liaison nurse continue to work with Dr. McClellan and the WVRC Infection Control Committee. This system has been successful and, hopefully, will continue to improve.

As has been stated before, the team approach with the clients involved in their staffings should continue. For the medical section, it would be ideal for the Medical Director or a physician to serve as the head of the team as they do in other spinal injury centers. However, the nurse is aware of the difficulties involved in implementing this approach in our type of setting. For the vocational training areas, it is recommended that they adopt the team approach as quickly as possible.

Separating training students who require Treatment Unit attendant care only from the therapy clients has been covered in another section. It is felt by the SCI Project nurse that this should be done as soon as possible. Receiving care on the Treatment Unit can only encourage dependency and cause further frustration for the care-givers.

It is recommended that an assistant director of nursing be appointed with supervisory responsibilities and responsibility for coordinating client/family education and staff education. In-service education on the Treatment Unit needs to be continued and geared to the needs of the clients on the Unit at any given time.

The SCI Project nurse was at times concerned by some staff members' attitudes toward the Treatment Unit staff. The negative attitudes toward this unit's staff negates their importance and value as vital members of the rehabilitation team and has resulted in some defensiveness on their part. It is difficult to objectively evaluate the contributing factors in this situation. It is felt that some Treatment Unit staff are under-utilized and that there is potential for an excellent rehabilitation care unit, if this potential could be tapped and used effectively. Attitudes on the part of all staff need improvement, and perhaps an outside resource person who is not involved in the dynamics of daily problems could be utilized to bring about attitudinal and motivational changes. Even though all this seems to be getting away from the topic of future services to disability groups, the nurse feels that staff attitudes, relationships, and morale play a big part in how well services and programs are carried out for our clients.

It is recommended that psychological services be expanded and include all disabilities. The nurse spent a great deal of time working through and around psychological problems in her efforts to educate the SCI person about his health needs. She frequently felt inadequate in this area and feels that both staff and clients need more extensive and ongoing psychological training and services.

From the SCI Project psychologist's point of view, it is felt that the SCI Project, in general, was successful and met the majority of the objectives outlined in the original grant proposal. It should be reiterated that the success of the SCI Project was not due to the SCI Project staff alone. It was due to the Project and the amount of support and cooperation from the various departments and staff within the Division of Vocational Rehabilitation. It required the cooperation of all these departments in an approach of treating and rehabilitating the entire person. An example of this cooperation is that of the Recreation Department at WVRC. In cooperation with the SCI Project staff, the Recreational Department arranged for numerous trips away from the Center in the form of concerts, picnics, etc., which were quite beneficial to the rehabilitation of the clients with spinal cord injury. These activities were in addition to the regular recreational activities of this department.

There were many other activities in which the SCI Project staff were involved which were not directly related to the client with spinal cord injury, but prompted the Project staff to respond to various needs of the Center. For example, some time was devoted to developing a program for an intermediate care facility which is yet to be implemented. Some of the staff have also worked with the brain injured and have assisted in establishing seminars and programs for alcohol and substance abuse and many other activities as requested.

It is felt that there has been a great deal of progress made, and there should be a mechanism whereby the programs that were developed, as well as what was learned, can be continued. Administration is strongly requested to provide assurances that the improved and expanded services for the spinal cord injured client will continue as an integral part of the rehabilitation program at WVRC.

It is the Project coordinator's observation that there has been a consensus of opinion among the Project staff and other staff working with the Project that we should, as a minimum, maintain our level of services for this disability group. Throughout the report, other recommendations have been made about additional services which will benefit this and other severely disabled clients.

Until the inception of this Project, very little factual data was available about spinal cord injured West Virginians. We currently estimate that there are 2300 persons living in West Virginia with traumatic spinal cord injuries. We further estimate that there are 40 to 60 new spinal cord injuries per year in West Virginia.

With the above figures in mind, it is being recommended that a feasibility study be done regarding the establishment of a Regional Model Spinal Cord Injury System in West Virginia. The Regional Model System concept includes provisions for the following objectives:

"1. To establish, within a catchment area or region of natural patient flow, a multidisciplinary system of providing comprehensive rehabilitation services to meet patient needs from point of injury (emergency treatment and transportation) through acute care; rehabilitation, including vocational and educational preparation; community job placement; and long term follow-up.

2. To achieve new knowledge through research in reducing disability and treating SCI and its complications.

3. To demonstrate and evaluate the development and application of improved methods and equipment essential to the care, management, and rehabilitation of the SCI patient.

4. To demonstrate methods of community outreach and education for the spinal cord injured in housing, transportation, recreation, employment and other community activities."(1)

The Regional Model System approach makes improvements in the following ways.

"The model provides for rapid case finding and referral; early rehabilitation coordinated by a highly sophisticated team; a mechanism for using all the necessary community agencies and services to facilitate rehabilitation success; and a long term community follow-up program to ensure that gains and adjustments are maintained."(2)

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(1) Model Systems' SCI Digest, Volume One, Spring-1979, pg. 5.

(2) Ibid.

West Virginia may currently be uniquely qualified for a Regional Model System for the first time in its history. The West Virginia University Medical Center in Morgantown, West Virginia, has considerable experience with the spinal cord injured person during the acute phase of the injury. This facility serves the northern part of the State, as well as parts of Ohio and Pennsylvania.

The Charleston Area Medical Center/General Division in Charleston, West Virginia, is even further advanced in its acute care treatment for its spinal cord injured patients. For a number of years, this facility has operated a spinal cord injury unit for its patients. The Charleston Area Medical Center provides many otherwise unavailable medical services for the sourthern part of West Virginia. It is also affiliated with the West Virginia University Medical Center in its teaching and residency programs.

West Virginia has also recently seen a great deal of interest generated in establishing medical rehabilitation facilities in several geographical locations within the State. Once established, these facilities have the potential to enhance the system of care for all spinal cord injured West Virginians, whether they are eligible for our Agency's services or not.

Therefore, there are several key components already available to begin building a Regional Model SCI System. Other components would have to be developed, improved, and implemented, such as a statewide system of emergency evacuation and transportation, long term follow-up, community outreach, coordination of services, clinical research/evaluation, etc.

Published reports from the existing Regional Models demonstrate improvements in the systems of care for the spinal cord injured person, as well as cost-effectiveness. This is certainly supportive of this Agency's investment in a feasibility study.

As numerous sections of this report have illustrated, the results of this Project have a number of implications for the State/Federal Rehabilitation program. The quality of services, programs, and outcomes have certainly been improved. Additionally, this has been accomplished in a cost-effective manner. This type of approach is highly recommended for those facilities working with spinal cord injured clients. Selected portions of the Project could also be creatively utilized in field and district vocational rehabilitation offices.